BC Hydro
Power smart

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September 30, 2016

Ms. Laurel Ross
Acting Commission Secretary
British Columbia Utilities Commission
Sixth Floor – 900 Howe Street
Vancouver, BC V6Z 2N3

Dear Ms. Ross:

RE: Project No. 3698878
British Columbia Utilities Commission (BCUC or Commission)
British Columbia Hydro and Power Authority (BC Hydro)
Inquiry of Expenditures Related to the Adoption of the SAP Platform

BC Hydro submits its responses to information requests in the above noted proceeding, in accordance with Commission Order No. G-146-16.

BC Hydro has organized its responses and related Exhibit number references as set out in the table below, which was necessary to manage the overall bandwidth of the filing.

Exhibit	Description	
Exhibit B-6	BCUC IR - Public Responses & Attachments	
Exhibit B-6-1	BCUC IR - Confidential Responses & Attachments	
Exhibit B-7	Intervener IR (except Adrian Dix) - Responses & Attachments	
Exhibit B-8	Adrian Dix IR - Responses	
Exhibit B-8-1	Dix IR 1.1.0 Dix IR 1.3.0 Dix IR 1.4.0 Dix IR 1.6.0 Dix IR 1.8.0 Dix IR 1.9.0	Attachments 1-24 Attachments 1-2 Attachments 1-2 Attachments 1-2 Attachments 1-86 Attachments 1-63
Exhibit B-8-2	Dix IR 1.10.0 Dix IR 1.11.0 Dix IR 1.15.0	Attachments 1-41 Attachment 1 Attachment 1
Exhibit B-8-3	Dix IR 1.16.0	Attachments 1-39

Exhibit	Description	
Exhibit B-8-4	Dix IR 1.16.0	Attachments 40-69
Exhibit B-8-5	Dix IR 1.16.0	Attachments 70-119
Exhibit B-8-6	Dix IR 1.16.0	Attachments 120-151
Exhibit B-8-7	Dix IR 1.16.0 Dix IR 1.20.0 Dix IR 1.21.0	Attachments 152-182 Attachment 1 Attachment 1
Exhibit B-8-8	Dix IR 1.23.0 Dix IR 1.24.0	Attachments 1-5 Attachment 1

As provided by section 42 of the B.C. *Administrative Tribunals Act* and section 18 of Commission Order No. G-1-16 Rules of Practice and Procedure, BC Hydro requests confidential filing with the Commission of Attachment 1 to the response to BCUC IR 1.14.2. The reasons for the request for confidentiality are set out in that IR response, and a public version of the attachment is provided at Attachment 9 to BC Hydro's response to BCUC IR 1.15.4.

BC Hydro also notes that during our review of materials while preparing our January 8, 2016 submission, we reviewed a relevant Human Resource (**HR**) matter that arose in 2010. Due to the confidentiality of such matters, BC Hydro has not included this document herein but raises that fact to the attention of the Commission.

For further information, please contact the undersigned.

Yours sincerely,

Tom Loski
Chief Regulatory Officer

rg/af

Enclosure

British Columbia Utilities Commission

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Log No. 52726

VIA EFILE

August 4, 2016

BC HYDRO INQUIRY OF EXPENDITURES
SAP PLATFORM EXHIBIT A-7

Mr. Tom Loski
Chief Regulatory Officer
Regulatory & Rates Group
British Columbia Hydro and Power Authority
16th Floor – 333 Dunsmuir Street
Vancouver, BC V6B 5R3

Dear Mr. Loski:

Re: British Columbia Hydro and Power Authority
Project No. 3698878
Inquiry of Expenditures related to the adoption of the SAP Platform

Further to Commission Order G-81-16 and Exhibit A-6 regarding the above noted proceeding, enclosed please find Commission Information Request No. 1.

In accordance with the Regulatory Timetable, please file your responses electronically with the Commission by Friday, September 16, 2016.

Yours truly,

Original signed by:

Laurel Ross

SW/cms
Enclosure

British Columbia Hydro and Power Authority
Inquiry of Expenditures related to the adoption of the SAP Platform
British Columbia Utilities Commission Action on Complaint

TABLE OF CONTENTS **PAGE NO.**

A. BACKGROUND 2
B. SAP-RELATED EXPENDITURES 6
C. BC HYDRO APPROVAL AND OVERSIGHT CONTROLS AND PROCESSES 13
D. IT&T FIVE-YEAR PLAN GOALS RELATED TO SAP INITIATIVES 25
E. SAP-RELATED DISCLOSURES TO THE COMMISSION 29

A. BACKGROUND

1.0 Reference: SAP AS THE DEFAULT ENTERPRISE RESOURCE PLANNING (ERP) SOLUTION (2008-2009)
Exhibit B-3, Consolidated Information Filing: Section 2.2, p. 8; Section 7.2, Table 13, p. 84; Attachment 5, pp. 4, 7, 9, 14; Attachments 33-35
SAP Enterprise program common infrastructure

BC Hydro states on page 8 of the Consolidated Information Filing: "In May 2008, BC Hydro's Executive Team (ET) agreed that BC Hydro should adopt a high-level strategy to move incrementally to a single ERP system and to the use of SAP as the default ERP solution (SAP Strategy)."

Footnote 17 on page 8 references Attachment 5 of the Consolidated Information Filing, which is the business case titled: "Office of the Chief Information Officer, SAP Enterprise Program Common Infrastructure, July 31, 2009 (July 2009 Common Infrastructure)."

Page 4 of Attachment 5 states: "The IT&T strategy therefore recommended deploying an SAP environment, and to incrementally deploy it in the financial and operational business groups over a 3-5 year period. The Executive Team (ET) endorsed this direction in May 2008."

1.1 Please clarify which "financial and operational business groups" BC Hydro is referring to on page 4 of the Business Case.

1.2 Please clarify which SAP projects/systems were contemplated as part of the "SAP environment" to be "incrementally deployed over a 3-5 year period" as described on page 4 of the Business Case.

BC Hydro further states on page 7 of Attachment 5:

> BC Hydro will proceed with a substantial amount of SAP related work. Even though SAP becomes the default ERP system for major projects, there still needs to be a high level demonstrable degree of business process fit (i.e. 80/20). At this stage this assumption is solid since work is proceeding on numerous fronts including Customer Care extensions, Finance, Project Management and Reporting. [emphasis added]

Under the "Mitigation Strategy" to address the risk titled "Availability of Resources to implement scope" on page 14 of Attachment 5, it states: "Resources to implement these scope items have been identified and planned, and will be closely coordinated with other activities currently underway in Customer Care, FSR and PPM."

On page 9 of the Business Case (Attachment 5), BC Hydro states: "Now that BC Hydro will have Customer Care, Financials and Project Management business processes all hosted within SAP…"

1.3 Please confirm, or explain otherwise, that "FSR" refers to the Financial Systems Replacement project and "PPM" refers to the Project & Portfolio Management project. Please also explain what "80/20" means in terms of business process fit.

1.4 Based on the descriptions on pages 7, 9 and 14 of the Business Case, please confirm, or explain otherwise, that in 2009 BC Hydro had, at minimum, commenced work on both the Financial Systems Replacement project and the Project & Portfolio Management project.

1.4.1 If BC Hydro was in the process of planning other projects beyond the FSR and PPM projects, please provide the names and descriptions of these projects.

Table 13 on page 84 of the Consolidated Information Filing provides a list of BC Hydro filings with the Commission that included SAP-related disclosures.

1.5 Please confirm, or explain otherwise, that the first instance of BC Hydro notifying the Commission of its intent to proceed with the Financial Systems Replacement project was in its June 12, 2009 filing in compliance with Directive No. 56 of the F2009/F2010 Revenue Requirements Application (RRA) Decision (provided by BC Hydro as Attachment 31 to the Consolidated Information Filing).

1.6 Please confirm, or explain otherwise, that the first instance of BC Hydro providing notification to the public (i.e. parties other than the Commission) of the Financial Systems Replacement project was in its F2011 RRA (provided by BC Hydro as Attachments 33, 34 and 35).

Attachment 33 contains an excerpt from Chapter 6 of the F2011 RRA which lists the Enterprise Financials Upgrade project under "Transformational Initiatives".

Attachment 34 provides an excerpt from Appendix I of the F2011 RRA, which includes the Enterprise Financials Upgrade project.

Attachment 35 provides an excerpt from Appendix J of the F2011 RRA, which includes a one-page project description of the Enterprise Financials Upgrade project.

1.7 Please explain why BC Hydro did not include in the project description, in Appendix J of the originally filed F2011 RRA, any reference to the fact that this project was previously titled the "Financial Systems Replacement" project.

1.8 Please explain why in the Enterprise Financials Upgrade project description in Appendix J of the F2011 RRA BC Hydro includes a discussion of three alternatives, including the alternative "Re-implement a new version of PeopleSoft Financials" given that BC Hydro was already in the implementation phase of adopting the SAP Financials platform.

1.9 Please confirm, or explain otherwise, that the first instance of BC Hydro providing notification to the Commission of the PPM project was in its F2011 RRA (provided by BC Hydro as Attachments 33, 34 and 35).

Attachment 35 provides an excerpt from Appendix J of the F2011 RRA, which includes a one-page project description of the PPM project. The Forecast Capital Cost listed for the PPM project is $15 million and the project description includes a discussion of two "waves" of the project implementation.

1.10 Did the forecast capital cost of $15 million listed in Appendix J of the F2011 RRA encompass both Wave 1 and Wave 2 of the PPM project? If not, please explain why not.

2.0 Reference: SAP AS THE DEFAULT ERP SOLUTION (2008-2009)
Exhibit B-3: Section 2.2, pp. 11-12; Attachments 2, 6, 7
Executive Summary: IT&T Update on strategy development, submitted by: Corporate Resources, May 22, 2008 Audit and Risk Management Committee Meeting of the Board (May 2008 ARMC)

Attachment 2 of BC Hydro's Consolidated Information Filing provides the first four pages of the Information Technology and Telecommunications (IT&T) Update on Strategy Development Executive Summary and Attachment 6 provides the last two pages of the aforementioned executive summary which contain the Chief Information Officer's (CIOs) notes.

2.1 Please explain why the last two pages of the Executive Summary of the May 2008 IT&T Strategy Development document containing the CIO's notes were omitted from BC Hydro's original filing on January 8, 2016 in response to the Adrian Dix complaint.

Page 5 of Attachment 6 of the Consolidated Information Filing states under the heading "Resolutions from ET Meeting May 12th 2008": "The following recommendations were approved at an extended team including executive team members and representatives from the business groups."

2.2 Please explain who comprised the Executive Team, including job titles and descriptions.

2.3 When was the original meeting which resulted in the first four pages of the Executive Summary (i.e. Attachment 2) held and who was in attendance?

2.4 Who prepared/wrote the first four pages of this Executive Summary?

2.5 When was the meeting held (i.e. date) which resulted in the final two pages of the Executive Summary (i.e. Attachment 6) and who was in attendance?

2.6 Who prepared/wrote the last two pages of this Executive Summary?

2.7 From an authorization/approval standpoint, what are the implications of the passing of "resolutions" by the Executive Team?

2.8 Please confirm, or explain otherwise, that the six-page IT&T Strategy Update Executive Summary, which includes the resolutions from the Executive Team meeting of May 12, 2008, were submitted to the Risk Management Committee (ARMC) Board Meeting on May 22, 2008.

2.9 The Executive Summary document refers frequently to "we" when describing the processes and recommendations contained in the document. Please explain who the "we" is referring to.

2.10 Please confirm, or explain otherwise, that even though no specific SAP project initiatives were approved in May 2008 by the Executive Team, in order to achieve the IT&T strategies described in the May 2008 Executive Summary, implementation of specific SAP project initiatives would be required in order to adopt a "single ERP" system environment.

BC Hydro states on page 11 of the Consolidated Information Filing: "The strategic policy decision to use SAP as the default ERP, as explained above, was made in May 2008. Also in May 2008, BC Hydro's Audit and Risk Management Committee (ARMC) of the Board of Directors was given an update on the IT&T strategy development."

BC Hydro further states on pages 11-12: "Although the ARMC meeting materials included the information quoted above, the minutes of the ARMC meeting do not indicate whether there was any discussion of SAP or a strategy to make SAP the default solution for IT&T initiatives, and the ARMC passed no resolution with respect to any aspect of the IT&T strategy."

Attachment 7, page 5 provides the summary of minutes from the ARMC meeting related to IT&T – Strategy Development.

2.11 Please explain the purpose of the presentation of the IT&T Strategy at the ARMC meeting and what resulted from this meeting (either formally or informally).

2.12 At the time the presentation was made to the ARMC (i.e. May 2008), what were BC Hydro's established governance and oversight policies related to approvals for its IT&T strategy development? Please provide evidence of the policies existing at that time and discuss how the IT&T strategy development and decision to adopt SAP as a single ERP system tracked with BC Hydro's governance and oversight policies.

2.13 At what point in the development of BC Hydro's IT&T strategy regarding adopting SAP as the default solution, if ever, did BC Hydro seek and obtain Board approval? Please explain.

3.0 Reference: SAP AS THE DEFAULT ERP SOLUTION (2008-2009)
Exhibit B-3, Attachment 4
Executive team meeting agenda – May 12, 2008

In agenda item #5 of Attachment 4 of the Consolidated Information Filing, the following statement is included under "IT Update": "**Reminder: Charles distributed a report on May 2, please bring it.*"

3.1 Please provide a copy of this May 2nd report if available.

4.0 Reference: SAP AS THE DEFAULT ERP SOLUTION (2008-2009)
Exhibit B-3, Section 2.2, pp. 8-9
SAP as the default ERP solution

BC Hydro states on pages 8-9 of the Consolidated Information Filing:

> The SAP Strategy recommended that when a business requirement arises, the SAP alternative will be examined to confirm whether the business need can be appropriately satisfied with SAP. If SAP does not meet the business need, a bolt-on solution would be considered…
>
> …The choice of SAP as a default solution did not approve the implementation of SAP for any project initiatives. Rather, the decision meant that SAP would be evaluated on a project-by-project basis, and selected when it meets business needs. [emphasis added]

4.1 Please confirm, or explain otherwise, that as of May 2008, alternative ERP options would only be considered if SAP did not meet BC Hydro's business needs.

4.2 Was the decision in 2008 described in the preamble above ever revisited to look at alternative options based on business needs without defaulting to SAP as the selected solution?

4.2.1 Since May 2008, have any non-SAP alternatives (i.e. "bolt-on solutions") been selected instead of an SAP solution? If so, please provide specific examples and explain why the non-SAP alternatives were chosen.

4.3 Is BC Hydro still pursuing the SAP Strategy adopted in 2008? Specifically, is SAP still considered by BC Hydro as the default choice and only if proven that SAP cannot fulfill business needs are alternatives investigated?

4.4 Was a competitive tendering process used for all/most SAP-related project choices?

4.4.1 If no, please explain how BC Hydro ensured/verified the competitiveness of project costs.

4.4.2 If yes, please indicate which projects underwent a competitive tendering process and how many vendors responded to each of the competitive tendering processes.

4.5 Please compare and contrast BC Hydro's current policy and practice for identifying information technology options and their alternatives to BC Hydro's policy and practice in 2008 when SAP was identified as the "default solution".

4.5.1 Please describe BC Hydro's validation process for identifying technology options and alternatives. If BC Hydro does not have a validation process, please explain why not.

4.5.2 Are all information technology options and alternatives given the same level of scrutiny and analysis? Please explain why or why not.

4.5.3 Has BC Hydro's competitive tendering processes changed since 2008/2009 related to IT expenditures? If so, please explain.

B. SAP-RELATED EXPENDITURES

5.0 Reference: SAP-RELATED EXPENDITURES
Exhibit A2-2, BC Hydro Response to Adrian Dix Complaint dated January 8, 2016: covering letter, p. 10; Tab B
SAP-related spending

BC Hydro states the following on page 10 of the January 8, 2016 covering letter filed in response to the Adrian Dix complaint (Exhibit A2-2):

> BC Hydro has spent $142 million in capital and operating dollars on SAP-related projects in the years ending December 31, 2015. The resulting systems have served BC Hydro well and BC Hydro sees no reason to deviate from the strategy of using SAP as our default option as other systems are updated in the future.

5.1 Please describe the assessment measures used by BC Hydro to qualitatively and quantitatively reach the conclusion that "the resulting systems have served BC Hydro well."

Tab B of Exhibit A2-2 contains the Expenditure Authorization Request (EAR) for the "Financial Systems Replacement Project: Implementation Phase" dated July 13, 2009 and the Business Case for the FSR Project (Implementation Phase) dated June 2009.

5.2 With reference to the Enterprise Financials Upgrade project (formerly named the FSR project), please explain how proceeding with SAP as the chosen option as opposed to upgrading PeopleSoft has achieved the business outcomes cited in the project's EARs and business cases.

6.0 Reference: SAP-RELATED EXPENDITURES
Exhibit B-3: Section 2.2, p. 10; Section 3.1.1, Table 2, pp. 16-20
Actual SAP-related project initiative expenditures – F2009-F2016

BC Hydro utilizes the following terms to describe the project status of the projects listed in Table 2 of the Consolidated Information Filing: (i) Closed; (ii) In Progress; (iii) In-Service; and (iv) Deferred.

6.1 Please define the term "Closed" as it pertains to a project's status.

6.2 Please explain why none of the projects listed in Table 2 are classified as "Completed" and how the project status "Completed" differs from "Closed", if at all.

6.3 Please explain the meaning of the project status "In-Service" and explain how this project status differs from "Closed" and from "Completed".

BC Hydro states on page 10 of the Consolidated Information Filing that it had a "large and robust SAP foundation to build upon since the Customer functionality (Industry Solution for Utilities – Customer Care and Services or IS-U-CCS) was in place and up-to-date, having undergone a successful implementation in 2003 and subsequent technical upgrade in 2007."

6.4 Please confirm, or explain otherwise, that the implementation of the SAP Customer Care system in 2003 was the first instance of SAP expenditures incurred by BC Hydro.

6.4.1 If not confirmed, please provide a list of the other SAP systems software/hardware expenditures incurred by BC Hydro prior to the implementation of SAP Customer Care. Please provide the following information for each SAP-related expenditure: (i) name and description; (ii) year of implementation; and (iii) total capital and operating expenditures.

6.5 Please expand Table 2 to include all SAP-related projects prior to F2009, including the SAP Customer Care and Services system which was implemented in 2003 and subsequently upgraded in 2007.

7.0 Reference: SAP-RELATED EXPENDITURES
Exhibit B-3, Section 3.1.1, Table 2, pp. 16-20
SAP-related project expenditures

7.1 Please identify which, if any, of the capital expenditures listed in Table 2 would be considered recurring expenditures. For instance, please confirm or explain otherwise that the "SAP Enhancements Pack Upgrade" line items are recurring expenditures.

8.0 Reference: SAP-RELATED EXPENDITURES
Exhibit B-3: Section 3.1.1, Table 2, p. 17; Section 4.6, Table 9, p. 50;
Exhibit A2-5, BCUC IR 3.5, Attachment 1, p. 10
Enterprise billing infrastructure (formerly: Customer Billing) project

In response to BCUC IR 3.5, BC Hydro provided the following information for the Enterprise Billing Infrastructure project:

- Current Status as of December 31, 2015: In Progress
- Developmental Stage: IDN (assumed to mean "identification")
- F16 Actual Capital Expenditures $3,154,000
- F16 Actual Operating Expenditures: $842,000
- Forecast remaining capital expenditures if not completed: TBD
- Total Cumulative Authorized Cost per Business Case (Capital & OPEX): $4,629,000

Table 2 on page 17 of the Consolidated Information Filing shows a total project cost for the Enterprise Billing Infrastructure project as of the end of F2016 of $6,265,000 ($5,245,000 Capital and $1,020,000 Operating) and an "In Progress" project status.

BC Hydro states in Table 9 on page 50 regarding the Enterprise Billing Infrastructure project: "Actual amounts spent is less than total authorized amount per EAR revision that was approved in April 2016 for a total amount of $10.5 million."

8.1 Please confirm, or explain otherwise, that the F2016 total cost of $6,265,000 has exceeded the "Total Cumulative Authorized Cost per Business Case" per the original EAR.

8.2 What is the total budgeted cost for the project? What is the timeline for completion of this project?

8.3 What prompted the revision to the EAR to increase the authorized amount?

8.3.1 Did the increased spending occur before or after the revised EAR was approved?

8.4 Please explain why this project was renamed from the Customer Billing project to the Enterprise Billing Infrastructure project.

8.5 Did BC Hydro incur any capital or operating expenditures under the project's original name?

8.5.1 If yes, please provide the capital and operating expenditures incurred and indicate whether or not these costs have been included as part of the costs provided in Table 2 of the Consolidated Information Filing.

BC Hydro states in Table 9 on page 50: "The financial approval process followed on this project is under review and information will be filed with the Commission when our review is complete."

8.6 Please clarify the statement that "the financial approval process followed on this project is under review."

8.7 Please confirm, or explain otherwise, that BC Hydro has followed its financial policies and controls and its project delivery standards (i.e. ITDSP) in the planning and implementation of the Enterprise Billing Infrastructure project.

8.8 Please clarify BC Hydro's statement in Table 9 that "information will be filed with the Commission when our review is complete." When does BC Hydro anticipate that this information will be filed with the Commission?

9.0 Reference: SAP-RELATED EXPENDITURES
Exhibit B-3, Section 3.4, pp. 23-28
Transformation initiative

BC Hydro states on page 24 of the Consolidated Information Filing:

> BC Hydro undertook considerable blueprint work to gain sufficient understanding of the required changes to business process, the human resource impacts, the technical complexity, and the total cost estimate of the full Transformation Initiative. At the time that design work was being developed, the expectation was that BC Hydro would implement these projects, in SAP, over a relatively short timeframe…
>
> …Following this comprehensive assessment, BC Hydro made a decision in late 2013 not to roll out the technology as part of one large project, but rather, to phase the rollout in a series of manageable steps over a number of years.

9.1 Please provide the blueprint and design phase EAR(s) for the Transformation Initiative project.

9.1.1 At the time the decision was made in late 2013 not to roll out the technology as part of one large project, what was the total authorized cost for this project?

9.2 Please provide the total cost incurred during the blueprint and design phases of the Transformation Initiative project.

9.2.1 At the time the decision was made in late 2013 not to roll out the technology as part of one large project, what was the total amount spent (operating and capital) on this project?

9.3 Please provide a step-by-step description of the approval process which BC Hydro underwent internally starting from the inception of the Transformation Initiative through the blueprint and design phases and through the decision in late 2013 not to roll out the technology as part of one large project.

9.4 Please explain whether, during the blueprint and design phase of the Transformation Initiative project, BC Hydro considered notifying the Commission of this planned large project and why BC Hydro ultimately determined not to notify the Commission of this initiative.

10.0 Reference: SAP-RELATED EXPENDITURES
Exhibit B-3, Section 3.4, pp. 23-28
Transformation initiative technology projects

BC Hydro states on page 23 of the Consolidated Information Filing:

> There were five primary SAP-related projects focused on delivering the required IT&T functionality within BC Hydro's SAP platform to complement the business work streams associated with the Transformation Initiative: Asset Management Foundational Technology, Work Management Foundational Technology, Customer Connections Foundation Technology, Schedule Dispatch Mobility, and Supply Chain Management. A sixth related project, Work Management Technical Readiness was underway and its designs were incorporated into the Transformation Initiative.

BC Hydro further explains on pages 27-28 how the Plan Schedule Work (PSW) project relates to the Transformation Initiative technology projects.

10.1 Please provide a timeline of the PSW project in chronological order which includes the following information:

(i) All major project milestones/stages, including all EARs and business cases to support the various stages of the PSW project.

(ii) A step-by-step description of the approval and oversight process which BC Hydro underwent internally starting from the blueprint and design phase of the original larger PSW project through to the completion of the PSW project.

(iii) All BC Hydro-initiated notifications to the Commission related to the PSW project, including information provided in RRAs and in BC Hydro's Annual Reports to the Commission.

10.2 Please explain if the PSW project was intended to replace an existing non-SAP system being utilized by BC Hydro.

10.2.1 If yes, please provide the name of the system, a description of why BC Hydro determined that this system required replacement, the condition of the existing system at the time the PSW project was initiated, the remaining useful life of the system, and the net book value of the system.

BC Hydro states on pages 27-28: "…the scope of PSW was then confined to a technical upgrade to deliver immediate benefits for Distribution, and the final authorized funding for PSW of $10.5 million aligned with the reduced scope."

Attachment 40 provides the project description of the PSW project provided in Appendix J of the Amended F2012-2014 RRA, which states: "Forecast capital cost is now $33.6 million with the project going into service in multiple stages across F2012-F2014."

10.3 Prior to the PSW project being reduced in scope, what was the total Authorized Cost for this project?

10.3.1 How much of this Authorized Cost was allocated to other projects? Please specifically identify each project and the amount (SAP-related or non-SAP-related) to which the original budgeted costs were allocated.

10.4 In consideration of the project scope for the PSW project as contemplated in the Amended F2012-F2014 RRA (i.e. forecast capital cost of $33.6 million), has BC Hydro now fulfilled all of the goals/outcomes contemplated in the original PSW project scope?

10.4.1 If no, please explain why not, identify the areas of the project scope which have not yet been achieved, and when/if BC Hydro plans to address these outstanding items.

10.4.2 If yes, please explain how these goals/outcomes were achieved. Please specifically identify each of the projects which addressed the goals/outcomes and provide the total cost of each of these projects.

BC Hydro states on page 28: "The DWS [Distribution Work Scheduling] project (also depicted in Figure 1) leveraged some of the technical designs from PSW as well. DWS was intended to satisfy some of the business requirements defined in the PSW project, particularly those related to work allocation and scheduling of work orders."

10.5 Please provide the EARs and business case for the DWS project.

10.6 How much, if any, of the original authorized cost for the PSW project was allocated to the DWS project?

Appendix A, page 74 shows that the required level of approval for the DWS project was "Executive"-level approval.

10.7 Please confirm, or explain otherwise, that the DWS project was in compliance with BC Hydro's IT Delivery Standard Practices (ITDSP).

10.7.1 If confirmed, please provide the supporting information to verify that the project was in compliance with ITDSP.

10.7.2 If not confirmed, please explain in detail the areas in which the project was not in compliance with ITDSP and why.

11.0 Reference: SAP-RELATED EXPENDITURES
Exhibit B-3: Section 3.1.1, Tables 2, 3, pp. 19-20; Section 3.4.2.1, pp. 25-26; Appendix A, pp. 66, 68
Supply chain

BC Hydro describes the "completion and refinement of the scope" of the Supply Chain Management project on page 26 of the Consolidated Information Filing, including the "Supply Chain Solutions Program" and the "Supply Chain Applications Project."

Appendix A, page 66 describes the Supply Chain Solutions – SAP project as follows: "This project implemented core SAP functionality for procurement, inventory, and meter management and quality management. This project, informed by the Supply Chain Management project's design blueprint, was the first, partial implementation of supply chain functionality in SAP." [emphasis added]

11.1 Please explain what stage BC Hydro reached with the Supply Chain Management project before the project was separated into the Supply Chain Solutions Program and the Supply Chain Applications Project.

11.2 Please provide the design blueprint and all EARs for the Supply Chain Management project prior to the project being separated into the smaller projects.

11.3 Please explain the significance of BC Hydro assigning the term "program" to Supply Chain Solutions and the term "project" to Supply Chain Applications. Please explain the difference, if any, in the meaning of the two terms.

BC Hydro states on page 26: "Approximately $4.8 million in costs…was transferred from the Supply Chain Management project to each of the four projects above based upon the proportion of design blueprint work used in each project with the remaining Supply Chain Management capital costs held in a work-in-progress (WIP) account."

11.4 Prior to the Supply Chain Management project being separated into multiple smaller projects, what was the total Authorized Cost for this project?

11.4.1 How much of this Authorized Cost was allocated to other projects? Please specifically identify each project and the amount (SAP-related or non-SAP-related) to which the original authorized costs have been allocated.

11.4.2 Please provide the capital cost amount which is being held in WIP.

11.5 Who approved the transfer of costs from the Supply Chain Management project to the smaller supply chain projects?

When describing the Supply Chain Solutions Program on page 26, BC Hydro states that it completed four stand-alone projects in 2014: Supply Chain Solutions (SAP), Supply Chain Solutions (SAP – Meters), Supply Chain Solutions – PassPort, and Supply Chain Workspace, which is in Microsoft Sharepoint.

Appendix A, page 66 describes the Key Outcomes of the Supply Chain Solutions – SAP project as follows: "Implemented improved tools for data governance, and core SAP functionality for procurement, materials, and electric meters inventory for better oversight and control…Implemented inventory management and purchasing functionality for electric meters in SAP…"

Appendix A, page 68 describes the Key Outcomes of the Supply Chain Solutions – SAP Meters as follows: "Implemented a more streamlined and integrated process for meter purchasing, receipt of electric meters, and returns of electric meters…Created electric meter records in SAP with attributes required to support billing of customers…"

11.6 Please clearly explain why BC Hydro treated the Supply Chain Solutions – SAP project and the Supply Chain Solutions – SAP Meters project as stand-alone projects.

11.7 Please provide all EARs and Business Cases for both the Supply Chain Solutions – SAP project and the Supply Chain Solutions – SAP Meters project.

11.8 Please provide the same information in the same format as has been provided for "SAP-related" projects in Appendix A for the (i) Supply Chain Solutions – PassPort project and the (ii) Supply Chain Workspace project.

11.9 If BC Hydro had treated the four Supply Chain Solutions Program projects as one project, what would the total authorized cost and the total actual cost have been?

12.0 Reference: SAP-RELATED EXPENDITURES
Exhibit B-3, Section 3.1.1, Table 3, p. 20
SAP-related project initiative expenditures – write-offs

12.1 Please clarify if the costs associated with the projects listed as "cancelled" in Table 3 have been written off.

12.2 Please explain if the costs which have been written off will still be recovered from ratepayers.

C. BC HYDRO APPROVAL AND OVERSIGHT CONTROLS AND PROCESSES

13.0 Reference: SAP-RELATED EXPENDITURES
Exhibit A2-2, Tab Z, pp. 12-13
Financial systems replacement project business case – June 2009

BC Hydro states the following on page 9 of the Financial Systems Replacement Project Business Case dated June 2009 which was filed as Tab Z in Exhibit A2-2:

> **IT Savings / Efficiencies:** Although the initial project investment is larger than that what was originally estimated for a PeopleSoft re-implementation, once fully implemented the SAP ERP will result in a simplified IT landscape that will enable a reduction in total IT spending that would not otherwise be achievable in a complex multi-ERP environment…
>
> … The anticipated reduction in future IT spending associated with a single vendor IT environment (the SAP solution) relates to lower future costs for development, sustainment, and maintenance of BC Hydro's enterprise applications. It is also expected that the new SAP systems will have minimal customization which will in-turn lower the ongoing development and sustainment costs. The potential savings will increase as BC Hydro commits to invest in future phases of the SAP program as these future phases will ultimately combine with this Project to create a fully integrated IT environment.

13.1 Please describe the metrics and/or measures put in place by BC Hydro to support the above statements regarding the anticipated reduction in future IT spending.

13.1.1 How has BC Hydro tracked and measured reductions in IT spending created by the implementation of SAP?

13.2 Please confirm, or explain otherwise, that BC Hydro has achieved reductions in IT spending on development, sustainment, and maintenance as a direct result of implementing SAP.

13.2.1 If confirmed, please provide supporting evidence to substantiate these reductions and, in particular, the spending reductions' correlation to the implementation of SAP.

13.3 Please describe BC Hydro's current process for defining and identifying expected outcomes such as the IT Savings/Efficiencies described in the FSR Project Business Case. Please also describe the types of supporting evidence used today to qualify and quantify expected benefits.

13.4 Please explain who under BC Hydro's current policies and procedures is accountable for reviewing and verifying the accuracy of statements made in business cases regarding expected benefits/savings, etc…

13.4.1 Does BC Hydro have either a formal or informal validation process that is followed prior to the publication of business cases? If there is a formal process, please provide the relevant BC Hydro policy/guideline. If no formal process exists, please explain why not and describe any informal validation processes which are in place.

13.5 Please compare and contrast the estimating and scheduling process in place during F2009-F2010, F2011-F2013, and F2013-current which was used to ensure that project planning assumptions, budget and resources are/were adequate.

13.5.1 Please assess the adequacy of the estimating and scheduling processes for the Enterprise Financials Upgrade project, PPM project, and Plan & Schedule Work project with regards to the adequacy of planning assumptions, budgets and resource availability.

13.6 With regards to the cost estimates provided in Businesses Cases and EARs, please explain the mechanisms in place to measure the accuracy of cost estimates. If the mechanisms in place are different depending on the phase/stage of a project, please separately identify the mechanisms in place at each phase/stage of a project.

13.7 Is Earned Value Management, Benefits Realization Management, or a similar framework, applied to IT projects at BC Hydro?

13.7.1 If yes, please identify the framework(s) in place.

13.7.1.1 Did BC Hydro use an industry-recognized certified and independent body to validate the implementation of the framework? If so, what were the results? If not, why not?

13.7.2 If no, please explain why not.

14.0 Reference: ORGANIZATIONAL STRUCTURE
Exhibit B-3, Section 2.1, pp. 3-5
Context for BC Hydro's SAP strategy development

BC Hydro states on page 3 of its Consolidated Information Filing:

> During 2007 and 2008, BC Hydro began to focus on its IT&T [Information Technology & Telecommunications] strategy in anticipation of changing business needs at BC Hydro and in particular, an increasing portfolio of capital projects and maintenance work programs. BC Hydro had a decentralized IT&T management structure at that time.

14.1 Is the IT&T management structure at BC Hydro still decentralized? Please explain.

14.2 What is the current composition of BC Hydro's IT&T organization? Please provide a current organization chart and responsibility assignment matrix (also known as a RACI Chart). Also, please indicate in the organization chart and responsibility assignment matrix the roles held by BC Hydro staff, professional services staff and contracted staff.

14.2.1 Please differentiate between operational structures as defined by human resources (HR) versus matrix operating structures in the delivery of projects and IT&T capabilities.

14.3 Are professional services or contracted staff engaged in the management of BC Hydro's IT&T?

14.3.1 What role(s) and function(s) do professional services, contract services and/or contract staff perform?

14.3.2 What form of responsibility and/or accountability has been delegated to professional services and/or contracted staff?

14.3.3 In what capacity are professional services and contracted staff involved in developing strategies and in developing business cases for specific IT projects?

14.3.4 What authority is assigned to professional services and contracted staff, if any?

14.3.5 How are recommendations made by professional services and contracted staff vetted and who is involved in the vetting process?

14.4 Please explain if BC Hydro has a conflict of interest disclosure policy which it applies to all employees and contract services/staff.

14.5 Please describe BC Hydro's reporting structure for the delivery of capital projects and IT&T capabilities. What categories and level of details of information are shared from the lower levels of the IT&T organization up to and including executive leadership?

14.6 In what forms do reporting and information sharing occur?

14.6.1 Are minutes documented for all meetings and stored for later review? If so, who reviews the minutes?

14.6.2 Please describe the criteria, if any, which are used to determine the amount of detail that is escalated to the top of the organization. Please also explain if there is a formal or informal escalation procedure.

14.7 Please explain how decisions are communicated through the organization and how they are enforced.

15.0 Reference: AUTHORIZATION AND GOVERNANCE
Exhibit B-3, Section 4.1, pp. 3-4, 30-31
Oversight of IT&T

On pages 3 and 4 of the Consolidated Information Filing, BC Hydro describes the IT&T management structure during 2007 and 2008 as "decentralized". BC Hydro states: "The Office of the Chief Information Officer (OCIO) was primarily responsible for IT&T policy, strategy, architecture and security, and enterprise-wide systems."

On pages 30-31, BC Hydro states:

> An IT&T Governance committee was established in F2009 to focus on ensuring IT&T investments are prioritized, achieve business value, simplify processes, enable reliability and safety goals, and are achievable with minimal risk to the organization. The group included senior managers from the operating groups and corporate groups, and was chaired by the CIO. It was active until January 2011. A Technology Governance Committee of the Executive Team was established in March 2011 whose mandate included oversight of IT&T expenditures…
>
> …In 2016, the Technology Governance Committee was discontinued and the full Executive Team assumed the Committee's responsibilities for oversight of IT&T.

15.1 Please provide the names and titles of the members of the Technology Governance Committee at the time it was discontinued.

15.2 Why was the Technology Governance Committee discontinued? Please explain.

15.3 Between January 2011 and March 2011, who or what committee was responsible for corporate IT governance and oversight of IT expenditures?

15.4 Starting from 2008 and ending at the present day, please describe how the CIO's role and the CIO's delegates and/or direct reports roles have changed in the (a) oversight of IT&T, (b) establishing policy and strategy, and (c) enforcing policy? Please describe and provide a chronology of the changes, if any.

15.4.1 If available, please provide organization charts and responsibility assignment matrices (i.e. RACI Charts) to support this response.

15.5 In chronological form starting from 2008 and ending at the present day, please show the mechanisms and/or controls and structures that were/are in place to ensure compliance to IT&T policy, processes and standards, and highlight how they have changed over this time period. Please provide samples of enforcement controls used.

15.5.1 As part of the above response, please describe in detail the changes which occurred in the oversight and governance of IT commencing in 2016 when the full Executive Team assumed the Technology Governance Committee's responsibilities for the oversight of IT&T. Please include in this response an explanation of the changes, if any, to the control mechanisms, expenditure authorizations, measures of success, and reporting requirements.

BC Hydro further states on page 30:

> Oversight of IT&T was provided by the Audit and Risk Management Committee (renamed the Audit and Finance Committee effective September 2011) until April 27, 2015, after which oversight was transferred to the Customer Service, Operations & Planning Committee (CSOPC)…

15.6 Please differentiate between the functions and responsibilities of the (i) the Audit and Risk Management Committee (renamed the Audit and Finance Committee); (ii) the CSOPC; (iii) the IT&T Governance Committee; and (iv) Executive Team with respect to the oversight and

governance of IT&T. As part of this response, please provide the following information:

- The composition of each oversight group, including the internal and external stakeholders which comprised each oversight group;
- The selection criteria and process used to select members to each oversight group;
- The expertise and mandates contained within each oversight group, including the Terms of Reference for each oversight group; and
- The accountabilities and responsibilities assigned to each oversight group.

15.7 Please explain the drivers which led to each of the changes to the committee responsible for overseeing IT&T.

15.8 Please provide the following information regarding IT&T-related change management:

(i) What areas of change management are monitored in the oversight of IT&T?

(ii) How is IT&T-related change management implemented?

(iii) Are the change management processes and procedures well understood across the IT&T organization?

(iv) Who is involved in IT&T-related change management?

15.9 Aside from the EAR, business case and Project Completion and Evaluation Report (PCER), are there other control mechanisms are in place to oversee IT&T? If yes, please describe these other control mechanisms.

15.10 Who is accountable for the accurate implementation of the controls? Is there a published and readily available inventory of controls? Please elaborate and provide samples.

15.11 What types of measures of success are used? How are these measures calculated and/or collected? Who looks at the measures? What decisions can be made based on the measures? Who is accountable for the accuracy of measures?

15.12 What industry frameworks and standards does BC Hydro's IT&T subscribe to (e.g., COBIT5, ISO/IEC 20000, ITILv3, Prosci, TOGAF9, etc.)?

15.12.1 Does BC Hydro measure capability maturity against any of these frameworks and standards on a regular basis? Please elaborate.

15.12.2 Does BC Hydro leverage any of the controls and measures established by any of these frameworks (e.g., 34 control objectives of COBIT5: Key Goal Indicators and Key Performance Indicators)? If so, please elaborate and give examples.

15.13 Does BC Hydro have currently established framework(s), guidance, policies and/or standards in place for investment prioritization, benefits realization management, and/or business process management? Please elaborate.

15.13.1 Have measures of success been defined for each? What are they? How are they tracked and reported on?

15.13.2 Who is involved in their implementation, application, measurement, reporting and review? Please provide examples of decisions or actions that are triggered by the results of measures.

16.0 Reference: AUTHORIZATION AND GOVERNANCE
Exhibit B-3, Section 4.2.1, p. 34
Business case requirements

BC Hydro states on page 34 of its Consolidated Information Filing:

> A business case is required for any project (or initiative) greater than $1 million requiring investment, expenditure or commitment that has significant impact on business operations, creates material risk and/or where there are credible alternatives to a recommended course of action.

16.1 How are "credible alternatives" defined?

16.2 What criteria are used to assess recommended/default options against alternatives? Is cost a factor used to assess options?

16.3 What forms of analysis are used in selecting options? Please elaborate.

16.4 Does a record exist of all alternatives considered that did not succeed based on analyses and/or lower scoring based on criteria? Please explain.

16.5 Who is involved in determining that alternative options being investigated are valid and applicable? What oversight exists in determining the validity of business case justifications?

16.6 Is independent advice sought in the preparation and/or validation of business case content? Please explain.

16.7 What function does the Business Case have in project delivery?

16.8 Is the Business Case used/revisited to measure, track and report on the success or failure in achieving the expected business outcomes? Please explain.

17.0 Reference: AUTHORIZATION AND GOVERNANCE
Exhibit B-3, Section 4.2.2, pp. 34-35
Expenditure authorizations

BC Hydro states on page 34 of the Consolidated Information Filing:

> BC Hydro's MAPP 1.2.1B.3 EAR describes the purpose and function of an EAR, which is a control document used for obtaining authorization for initiative expenditures and commitments exceeding $100,000…

…An EAR is required to commence the Definition Phase of a project. A single EAR is prepared for each identifiable project.

17.1 Please explain who is involved in assisting the initiator of a project with preparing an EAR.

17.2 Who validates the assumptions and forecasts included in the EAR, given that it precedes planning and costing?

17.3 Is a separate EAR produced for every component of a project or is there only a one-to-one match between an EAR and a project?

17.4 Using the following example, please explain if and how multiple EARs would be produced.

Example: A project that entails procurement, installation and configuration of enterprise software and the infrastructure to host it can be broken down to its sub-projects:

(i) Procurement, installation and configuration of servers into the data center which would include installation of operating system and device drivers;

(ii) Network and security integration of server into the corporate system environment;

(iii) Procurement, installation, configuration of enterprise software;

(iv) Enterprise software integration to larger enterprise system software either by Enterprise Server Bus, Business Process Integrator/Workflow, or if enterprise software is a module of a larger software solution; and

(v) Application development testing, user acceptance, and transition to operations.

17.5 Please explain how the estimates and forecasts included in the EAR are tracked and reported on.

17.6 Please describe the oversight involved in tracking the life cycle of an EAR. Who is accountable for the EAR and how involved are they in the day-to-day fulfillment of the project for which the EAR authorizes?

17.7 Is there a common process and mechanism that projects must use to forecast EAR Revisions beforehand or are EAR Revisions triggered on an event-by-event basis?

17.8 In what situations are EARs approved, denied or cancelled, and what criteria are used to make these determinations?

17.9 Please explain what happens when an EAR Revision requires a change to the overall project budget.

17.10 Who has visibility to EAR Revisions and how are EAR Revisions tracked, reported on, and/or measured?

18.0 Reference: PROJECT MANAGEMENT GUIDELINES FOR TECHNOLOGY PROJECTS
Exhibit B-3, Attachment 18, p. 23
Relationship with submitting business cases / EARs for approval

BC Hydro provides the following diagram on page 23 of Attachment 18 to the Consolidated Information Filing:

BC Hydro further provides the following information on page 23 of Attachment 18 regarding ITDSP:

> The appropriate ITDSP Gates must be passed before submitting a Statement of Objectives / EAR or Business Case / EAR, for approval:
>
> - Gate 1 Identification Approval must be passed before submitting an Identification Phase Statement of Objectives / EAR for approval. Please note that Gate 1 is handled through the Project Release Process
> - Gate 2 Preliminary Approval must be passed before submitting a Definition Phase Business Case / EAR for approval
> - Gate 3 Full Funding Approval must be passed before submitting an Implementation Business Case / EAR for approval.

18.1 For each of the following projects, please provide the Business Cases, Statement of Objectives, Project Charters, and Project Level Change Notices used for each of ITDSP Gates 1, 2 and 3:

(i) PeopleSoft Financials Upgrade;
(ii) Financial Systems Replacement Project;
(iii) Enterprise Financials Upgrade;
(iv) Plan and Schedule Work (PSW);
(v) Project & Portfolio Management ;
(vi) EMPower (formerly called the "Human Resources System Replacement" project); and
(vii) Distribution Work Schedule (DWS).

18.2 Did BC Hydro identify/explore alternative technology solutions for any/all of the following projects prior to proceeding with the SAP solution? (i) PPM; (ii) PSW; (iii) EMPower; (iv) DWS

18.2.1 If yes, please explain if the alternative technology solutions were analyzed using the same criteria analyzed for the SAP option.

18.2.2 If no, please explain why not.

18.3 Please provide a chronological summary of relevant EARs prepared in conjunction with the following projects/programs in conformance to the ITDSP Gates up to and including the Warranty Period highlighting: (a) the original amounts, (b) the change in amounts, (c) the justification for the change, and (d) whether it was approved, denied, pending approval or cancelled:

(i) Enterprise Financials Upgrade;
(ii) PSW;
(iii) PPM;

(iv) EMPower; and
(v) DWS

18.3.1 For each EAR identified, please ensure the following information is included: (i) the original amounts, (ii) the change in amounts, (iii) the justification for the change, and (iv) whether the request was approved, denied or cancelled.

19.0 Reference: AUTHORIZATION AND GOVERNANCE
Exhibit B-3, Section 4.2.3, pp. 35-36
Project completion and evaluation reporting (PCER)

19.1 In what scenarios under BC Hydro's current governance and oversight policies would a PCER be optional? Please explain.

19.2 In instances when a PCER was not created, what alternative forms were used to track acceptance that a project met the business needs?

19.2.1 Are metrics used? If so, what are they, how are they used and by whom? Who is accountable for the accuracy of the metrics? Who are the consumers of these metrics?

19.3 Please provide the PCERs for the following projects:

(i) Enterprise Financials Upgrade;
(ii) PSW;
(iii) PPM;
(iv) EMPower; and
(v) DWS

19.3.1 If a PCER does not exist for any of these projects, please explain why and how the lack of a PCER would likely have impacted the assessment of the project.

19.3.2 If an alternative report/assessment was prepared in lieu of a PCER, please provide this document.

19.4 What forms of reporting exist during the life cycle of a project? Who sees these reports? What measures are used to track the progress of a project? What actions are taken based on the tracked measures (e.g., when a project is at risk of over-spending or of not achieving a business objective)?

20.0 Reference: PROJECT DELIVERY GOVERNANCE
Exhibit B-3, Section 4.3, pp. 36-37
IT&T project roles

BC Hydro states on pages 36 and 37 of its Consolidated Information Filing:

> The Project Manager has primary responsibility for the project... The Project Manager is the person with appropriate qualifications who is assigned the responsibility of leading the project team to complete the objectives of the project. The Project Manager is the person with the single point of accountability for the project.

20.1 Are professional services or contracted staff engaged as project managers at BC Hydro for IT projects? If so, what oversight and control mechanisms are in place to oversee professional services and contract staff acting as project managers?

20.1.1 Do professional services and contract project managers have the same authorities, responsibilities and accountabilities as the ones prescribed for BC Hydro internal employees in the Project Management Guidelines for Technology Projects (6D.105)? Please explain.

21.0 Reference: PROJECT MANAGEMENT GUIDELINES FOR TECHNOLOGY PROJECTS
Exhibit B-3, Attachment 18, pp. 14-15
Project manager responsibilities

The following is a list of some of the key responsibilities identified for the project manager on page 15 of Attachment 18 of the Consolidated Information Filing:

- Detail and manage the scope, schedule, cost, quality and associated risks of the work to achieve the project objectives approved by the Project Initiator.
- Develop all project plans and manage the overall project delivery, and achievement of targeted project performance metrics. Accountable for acceptable completion of the project plan tasks on time, in scope, schedule and cost changes.
- Maintain an auditable record of scope, schedule and cost changes.
- Maintain an auditable record or project deliverables including approval records as appropriate.
- Track scope against requirements.

21.1 What controls and measures are used to manage and track scope, schedule, cost, quality and associated risk? Please elaborate.

21.2 How frequently are controls and measures tracked and reported on? Who consumes these reports? What thresholds are in place for triggering actions/escalation? Please elaborate.

The following additional key responsibilities are listed for the project manager on page 15 of Attachment 18:

- Report significant changes to the Project Initiator and Project Sponsor. Formally advise the Project Initiator and seek his/her direction if the project schedule or objectives cannot be maintained through modification of work sequence or approved resources.
- Proactively raise issues of significant concern to Project Initiator and/or Steering Committee so that they have the opportunity to provide their assessment and input for resolving the matter.
- Ensure coordination and integration of project deliverables and timelines with related initiatives identified in the Business Case, Statement of Objectives and/or Project Charter or otherwise, as directed by the Steering Committee.
- Ensure escalation and coordination of issues to support timely resolution.

- Maintain an issue log, report on project risks, and ensure risk treatment plans developed for project risks and implemented on a timely basis.

21.3 Have these project manager responsibilities changed since 2008? Please elaborate.

21.4 What is the escalation framework/process made available to project managers? How effective is the process? How much information is escalated and to whom? Please elaborate.

21.5 Did the various Governance Committees and now does the IT&T Executive Team approve, track and report on Critical Path Milestones identified in project plans? Please explain.

22.0 Reference: AUTHORIZATION AND GOVERNANCE
Exhibit B-3, Section 4, pp. 40-41
Internal audit

BC Hydro states on page 40 of its Consolidated Information Filing:

> BC Hydro's Audit Services group (with the assistance of external subject matter experts as required) conducts periodic audits of IT&T delivery processes, projects and adherence to solutions delivered by projects, as part of its overall BC Hydro internal audit programming. Management considers and adopts the audit recommendations as appropriate, as part of continuous improvement efforts.
>
> For example, the 2012 audit of the EMPower project resulted in a more prominent role and increased staffing for the Technology PMO, increased focus on project delivery standards and controls, and the 2013 revision of ITDSP resulting in overall better control and performance of IT&T projects.

22.1 What triggers an audit? Please explain.

22.2 What is meant by periodic audits? How frequently does the Audit Services group conduct internal audits?

22.2.1 To date, how many IT&T-related audits has the Audit Services group conducted?

22.3 In what situations would audit recommendations not be adopted or acted upon? Please explain.

22.4 Who participates in the audits?

22.5 Who are the main users of the audit reports?

22.6 When assessing a technology project, what does an audit entail? What is measured and what are the measures used to assess a project? What methodologies were used to conduct the audit? Please elaborate using the EMPower project audit as an example.

22.7 Has BC Hydro ever engaged external auditors to perform IT-related audits? If yes, describe these audits and explain why they occurred. If no, please explain why not.

22.8 Did BC Hydro conduct internal audits for the following SAP-related projects: Enterprise Financials Upgrade, PPM, PSW, and DWS? If yes, please provide the internal audit reports. If no,

please explain why not.

22.9 Did BC Hydro engage external auditors to audit any of the following SAP-related projects: Enterprise Financials Upgrade, PPM, PSW, EMPower, and DWS? If yes, please provide the external audit reports.

23.0 Reference: FINANCIAL OVERSIGHT AND PROJECT DELIVERY GOVERNANCE
Exhibit B-3, Section 4.6, Table 9, pp. 34, 44-50
Financial oversight and project delivery governance for SAP-related projects

BC Hydro states the following on page 44 of the Consolidated Information Filing: "For the purpose of Table 9, the summary comment on governance that "Successful project outcomes delivered" means that a solution was implemented with little downtime to the organization and is in productive use, functioning largely as expected."

23.1 Please provide a more detailed list of assessment criteria which may be used to assess whether each project listed in Table 9 would receive a "Good", "Fair" or "Poor" rating for Financial Oversight and Project Delivery Governance.

23.1.1 Please revise Table 9 to include a column which ranks each project as "Good", "Fair" or "Poor" and provide an accompanying explanation for this ranking based on the criteria described in response to BCUC IR 23.1.

23.2 Please identify the projects in Table 9 which fully complied with all of BC Hydro's financial oversight and project delivery governance policies.

23.3 For each project listed in Table 9 where the summary comment on governance indicates "Successful project outcomes delivered", please explain what other measures of success were used in addition to "the solution was implemented with little downtime to the organization and is in productive use, functioning largely as expected".

23.3.1 Are business benefits tracked?

23.3.2 Are there instances when a solution was implemented with minimal downtime and is functioning as expected, but did not achieve the expected business outcomes? In these cases, would a project still be deemed "successful"? Please explain and include a discussion of how these situations would be tracked and reported on.

23.4 With regards to the projects listed in Table 9 which do not contain the comment "Successful project outcomes delivered", please explain why, and specifically indicate for each project whether the reason(s) was/were due to (i) the project resulting in downtime to the organization, (ii) the project not being in productive use, and/or (iii) the project not functioning largely as expected.

23.5 For each project in Table 9 that overspent prior to an EAR/EAR Revision approval, did the project budgets change with every approved EAR Revision? Please explain.

BC Hydro states the following on page 34 of the Consolidated Information Filing: "BC Hydro's MAPP 1.2.1.B.3 EAR describes the purpose and function of an EAR, which is a control document used for obtaining authorization for initiative expenditures and commitments exceeding $100,000."

23.6 Given the above excerpt's statement that an EAR is a "control document" for "obtaining authorization for initiative expenditures", please clarify the statements made in Table 9 which appear to demonstrate that expenditures precede the EAR and approval.

23.7 What is the escalation process when a project is at risk of over-spending? What actions are taken when risks are escalated? Are there policies and guidelines that cover this? Please explain.

23.8 What forms of authorization or approval take place to permit projects to incur expenditures prior to an EAR approval? Are there instances where expenditures are incurred in advance of an EAR being approved and the EAR is ultimately denied? If yes, who is accountable for expenditures where EARs are not approved?

23.9 What conditions must be met and/or exceptions exist where a project need not adhere to BC Hydro's Technology Project Governance or the ITDSP? Who can authorize non-compliance to BC Hydro standards?

23.10 Are there any SAP-related projects that have not been recorded in Table 9? If yes, please add these projects and explain why they were not originally included in Table 9.

D. IT&T FIVE-YEAR PLAN GOALS RELATED TO SAP INITIATIVES

24.0 Reference: SAP AS THE DEFAULT ERP SOLUTION (2008-2009)
Exhibit B-3: Section 2.2, p. 12; Attachment 10; Exhibit A2-2, Appendix 2, p. 3
IT&T five-year plan

BC Hydro states on page 12 of the Consolidated Information Filing: "From mid-2008 to spring 2009 BC Hydro's IT&T strategy continued to be under development and in November 2009, BC Hydro finalized its IT&T Five-Year Plan."

Attachment 10 of the Consolidated Information Filing contains the "BC Hydro Information Technology & Telecommunications Five Year Plan – Year 2" dated November 18, 2009, which was originally filed as Appendix N to BC Hydro's F2011 RRA.

In BC Hydro's January 8, 2016 response to the Adrian Dix complaint, filed as Exhibit A2-2, BC Hydro provides in Appendix 2 a "Summary Description of the 2009/10 RRA Filed in February 2008 in Relation to IT Capital". On page 3 of Appendix 2, BC Hydro states the following:

> In response to one of the IT&T-related Information Requests asked of BC Hydro and noted above (Commission Information Request 1.71.2.2) BC Hydro stated that it would file its IT&T Strategy in its Evidentiary Update…
>
> …BC Hydro did not do so and provided no reason for that failure in the Evidentiary Update.

24.1 Please provide the <u>original</u> IT&T Five-Year Plan which was finalized in November 2009.

24.2 Please explain the process to finalize the IT&T Five-Year Plan, including the required levels of approval within BC Hydro.

24.3 Was the finalized IT&T Five-Year Plan presented to BC Hydro's Board of Directors?

24.3.1 If yes, please provide the minutes of the Board of Directors' meeting where this presentation occurred and indicate whether the Board approved the IT&T Five-Year Plan.

24.3.2 If no, please explain why not.

25.0 Reference: IT&T PLAN GOAL – SAP AS THE CORE
Exhibit B-3, Section 5.1.1, Figure 2, pp. 52-55
Simplified integrated applications with SAP as the core – Goal 2

BC Hydro states on pages 52-53 of the Consolidated Information Filing:

> The simplification referred to in this goal assumes that implementing business capabilities and processes in fewer or one integrated system will (a) allow disparate systems to be decommissioned, resulting in reduced operating costs, and (b) enable BC Hydro to implement improved business processes due to the integrated nature of ERP software.

On page 6 BC Hydro states that by 2008 it had implemented the following ERP systems: PeopleSoft, PassPort, SAP, JD Edwards, and Oracle Suite.

Table 2 on page 18 shows the status of the "PeopleSoft Decommissioning" project as "closed" for a total cost of $347,000.

BC Hydro states on page 58 that to date it has fully eliminated major applications such as PeopleSoft Financials, PeopleSoft HR, JD Edwards, BC Transmission Corporation's Oracle system, as well as many other customer systems.

25.1 Please clarify if BC Hydro has fully decommissioned the following ERP systems which it listed on page 6 as being in place up to 2008: PeopleSoft, JD Edwards, and Oracle.

25.2 If BC Hydro has decommissioned JD Edwards and Oracle, please explain why the decommissioning costs were not listed in Table 2 of the Consolidated Information Filing.

25.3 With regards to the implementation of the Enterprise Financials Upgrade project, PPM and EMPower, please indicate whether each of these projects were initiated in response to the expected obsolescence of the existing systems/applications, or if the projects were initiated at a time when the existing applications still had useful lives.

25.3.1 For each of the major applications described by BC Hydro on page 58 as being fully eliminated, please indicate whether these applications were at the end of their useful lives. Please also provide the net book value of each of these applications at the time of elimination.

26.0 Reference: IT&T PLAN GOALS
Exhibit B-3, Section 5.1, p. 54
IT&T plan goals, target and applicability of the goals to the SAP strategy

BC Hydro refers on page 54 of the Consolidated Information Filing to major "business-facing" SAP projects.

26.1 Please define the term "business-facing" in reference to SAP projects.

26.2 Please clarify, with reference to Table 2 of the Consolidated Information Filing, which projects in that table are not considered "business-facing" and why.

26.3 Please revise Figure 2 on page 55 to include all business-facing and non-business-facing SAP projects greater than $1 million.

27.0 Reference: IT&T PLAN GOALS
Exhibit B-3, Section 5.1, Table 10, p. 52
IT&T plan goals, target and applicability of the goals to the SAP strategy

The following table has been copied from BC Hydro's Consolidated Information Filing (Table 10 on page 52) and modified to include an additional column titled "BCUC IR".

Table 10 IT&T Plan Goals, Target and Applicability of the Goals to the SAP Strategy Projects

IT&T Plan Goal	Targets	Applicability of Goal to SAP Strategy	BCUC IR (see below)
1. Enterprise-wide investment decision making focused on BC Hydro Priorities	Single, enterprise-wide investment plan and governance group	Not applicable – this goal relates to the implementation of processes and governance to improve planning, generally, for IT&T	• 27.1 • 27.2
2. Simplified Integrated Applications with SAP as the Core	< 300 Applications < 50 databases SAP as ERP	This goal and the 'SAP as ERP' target are applicable – discussion follows below	• 27.1
3. Business Satisfaction	TBD %	Partially applicable – discussion follows below	• 27.1
4. Virtualized and controlled environment for lower cost and improved responsiveness	75% virtualization of storage and servers 1 PC per office worker < 10 PC images	Not applicable—this is unrelated to the SAP Strategy	• 27.1 • 27.3
5. Integrated end-to-end with 3-4 key IT services providers	> 85% of external spend on strategic suppliers	Not applicable – this is unrelated to the SAP Strategy	• 27.1 • 27.4
6. Clear information architecture and 'single source of truth' with high quality	Information architecture established meta data model deployed	Partially applicable – discussion follows below	• 27.1 • 27.6 • 27.7
7. Lower cost of IT	30% reduction of IT&T OMA as a % of BC Hydro OMA	Partially applicable – discussion follows below	• 27.1 • 27.5
8. Predictable IT project delivery	90% on-time, on -budget, on-scope of top priority pieces	Not applicable – this goal relates to the implementation of IT&T project delivery processes and governance, generally	• 27.1 • 27.8

27.1 What are/were the metrics or key success indicators used to measure achievement of these goals? Please provide an annual account of the metrics from the statement of the goals to its achievement and the date it was achieved. In Goal 7, please show the changes in the overall cost of IT differentiating between operating, sustain and capital expenditures.

27.2 Please further explain why IT&T Plan Goal 1 – Enterprise-wide investment decision making focused on BC Hydro priorities with a "Target" of "Single, enterprise-wide investment plan and governance group" is not applicable, in whole or in part, to the SAP Strategy.

27.3 Please explain how Goal 4 would not be related to SAP. Is the SAP software not hosted on the virtualized servers and the data not stored in the virtualized storage?

27.3.1 Which components of SAP are leveraging the virtualized environment of Goal 4? Which components require stand-alone infrastructure?

27.3.2 What have been the infrastructure expenditures (servers, storage, networking, security integration, professional services, software licenses, contracted labour) related to the hosting, integration, configuration, operations, backup and recovery, and monitoring of the SAP solutions to date?

27.4 As a matter of record, who are the key 3-4 IT service providers of BC Hydro accounting for greater than 85% of external spend, as stated in Goal 5? Has Goal 5 been achieved? When?

As part of explaining the applicability of IT&T Goals to SAP, specifically IT&T Goal 7 – Lower Cost of IT, BC Hydro states on page 57 of its Consolidated Information Filing:

> Through the implementation of the IT&T Plan it was intended that IT&T operating costs would be reduced as a percentage of overall BC Hydro operating costs. This goal is partially related to the implementation of SAP initiatives in that there was an expectation that decommissioning disparate systems, whose functions were being transferred to the integrated SAP environment, would result in operational cost savings for IT&T.
>
> It was not intended, however, that the implementation of SAP initiatives, in and of themselves, would account for a specific operational cost savings. As noted on pages 4 to 5 of the IT&T Plan and as set out in BC Hydro's response to F2011 RRA BCUC IR 1.275.3 (refer to Attachment 25), $4 million of the $9.3 million reduction in IT&T operating costs were related to reduced software and application maintenance costs.

27.5 What has been the total IT spend (total amounts in procuring, implementing, enhancing, updating and supporting the SAP system; re-training of staff; and the organizational change costs – i.e., business process changes, etc.) to date for SAP-related projects? What has been the actual dollar savings to date that was a direct contribution to standardizing to SAP? What is the actual annual dollar savings directly attributed to SAP investments?

27.6 What is BC Hydro's definition for "high quality" as stated in IT&T Goal 6? What is the measure of success used? Has the goal been achieved? Please elaborate.

27.7 Has BC Hydro implemented a Data Governance framework, Data Stewardship process and/or Data Quality Management tools to ensure the accuracy of "truth" as part of IT&T Goal 6? Please elaborate.

27.8 Please provide further explanation as to why IT&T Plan Goal 8 is not applicable, in whole or in part, to the SAP Strategy.

E. SAP-RELATED DISCLOSURES TO THE COMMISSION

28.0 Reference: REVIEW OF BC HYDRO'S INFORMATION TECHNOLOGY EXPENDITURES
Exhibit A2-2, BC Hydro January 8, 2016 Letter to the Commission, p. 7
Disclosures during F2009-F2010 RRA oral hearing

BC Hydro states on page 7 of its letter to the Commission dated January 8, 2016: "In summary in both its testimony and in its response to Undertaking 62, BC Hydro failed to take the opportunity to bring the Commission up-to-date with respect to its approach to IT&T systems."

28.1 For clarity, please confirm that BC Hydro does not believe that the incomplete disclosures made, in direct response to questions asked during the F2009-F2010 RRA oral hearing, were a contravention of any section of the UCA nor of any rules or requirements of the Commission.

28.1.1 Please clarify which version(s) of the UCA BC Hydro is referring to: the currently enacted version, the version in place during the F2009-2010 RRA oral hearing, or another version?

29.0 Reference: BC HYDRO RESPONSES TO COMMISSION STAFF QUESTIONS ON IT EXPENSES
Exhibit A2-5, BC Hydro April 8, 2016 Response to Staff Question 1.1.2
Disclosures during F2009-F2010 RRA oral hearing

In BCUC staff question 1.1.2, BC Hydro was asked the following question: "In BC Hydro's opinion, to ensure accountability, what would be a reasonable response from the Commission when a regulated utility does not provide full and complete disclosure within a proceeding?"

In response, BC Hydro submitted the following:

> 4. If the failure to disclose did not constitute a breach of the Act nor materially affect a Commission decision, should the Commission nevertheless address specific questions to the utility pursuant to section 43 of the Act to ensure that the information that was not previously disclosed is required to be disclosed in future proceedings?

29.1 Please clarify how BC Hydro believes that the Commission might determine if a failure to disclose information did not materially affect a Commission decision.

30.0 Reference: SAP-RELATED DISCLOSURES TO THE COMMISSION
Exhibit B-3, Section 7.1, pp. 72-82
Disclosures during oral hearings and regulatory requirements for information disclosed

On pages 72-82 of the Consolidated Information Filing, BC Hydro provides "Table 12: Summary of Utilities Commission Act, Provisions and Other Requirements and Commitments related to Capital Projects and Expenditures."

On page 72, BC Hydro states this table provides "a summary of the Utilities Commission Act provisions, BC Hydro Commitments and Commission requirements in effect year by year that related to BC Hydro's disclosure of capital projects and expenditures, including SAP related over the period F2009 – F2016."

30.1 During F2009-F2016, what internal controls and guidance existed/exists at BC Hydro to ensure information disclosed to the Commission during oral hearings, in relation to the requirements of Table 12, is complete, accurate and timely?

30.1.1 Specifically, leading up to and during an oral hearing, what steps are taken by (i) senior regulatory management and (ii) legal counsel to ensure this disclosure?

30.1.2 After a hearing, what steps are taken by both senior regulatory management and legal counsel to ensure disclosures made during the oral hearing were complete, accurate and timely?

30.1.3 Who is responsible and what happens if an inaccurate, incomplete or untimely disclosure is made to the Commission by a Utility Witness during an oral hearing?

30.2 Should it be a requirement of the Commission that utility witnesses must provide, to the best of their knowledge, complete, accurate and timely information to the Commission in response to every question asked during an oral hearing?

30.3 Should it be a requirement of the Commission that utility senior regulatory management and/or legal counsel must, as soon as possible, correct any information provided by a utility witness that is not complete, accurate or timely?

30.4 Why does BC Hydro believe utility witnesses are "sworn in" by the hearing officer prior to participating in an oral hearing?

30.5 Are there any other sections of the *Utilities Commission Act* or other Commission requirements that establish regulatory requirements for BC Hydro to make complete, accurate and timely disclosures to the Commission within its filings to the Commission?

30.5.1 What regulatory requirements exist for making complete, accurate and timely disclosures in filings to the Commission in relation to capital projects and expenditures?

30.5.2 What regulatory requirements exist for making complete, accurate and timely disclosures within oral hearings before the Commission?

30.6 Does BC Hydro believe it would be beneficial for the Commission to establish guidance or requirements clarifying the Commission's expectations, responsibilities and/or conduct of utilities and witnesses during oral hearings?

30.6.1 If the Commission were to recommend that such guidance or requirements be developed, what approach would BC Hydro recommend for this process?

31.0 Reference: SAP-RELATED DISCLOSURES TO THE COMMISSION
Exhibit B-3, Section 7.2, p. 85
Regulatory filing requirements – PPM project

On page 85 of the Consolidated Information Filing, BC Hydro states that during the F2012-F2014 RRA: "BC Hydro explained to the Commission its reasons for not filing an application for approval of PPM project costs, and the Commission did not indicate any concerns."[34]

Footnote 34 on page 85 provides a reference to BC Hydro's response to BCUC IRs 1.261.1 and 1.261.1.1 in the F2012-F2014 RRA proceeding, filed as Attachment 46.

31.1 Did BC Hydro explicitly seek approval or consent for its plan to not file an application for PPM project costs in the F2012-F2014 RRA?

31.2 Were the PPM costs and the matter of cost approval within the scope of the F2012-F2014 RRA? Please explain why or why not.

31.3 Is it BC Hydro's position that an application for the PPM project was not required by the UCA or existing Commission requirements?

31.3.1 If not, why did BC Hydro inform the Commission of its intent to not file an application for approval of PPM project costs during the F2012-F2014 RRA?

31.4 Is it BC Hydro's submission that if a utility informs the Commission that it does not intend to file an application, and if the Commission makes no response to the matter, then the utility is no longer required to file an application despite potential filing requirements?

31.5 Please explain when and how BC Hydro would have expected to receive indication from the Commission of any concerns related to BC Hydro not filing an application for approval of PPM project costs, given that BC Hydro first notified the Commission of this through responses to IRs.

32.0 Reference: SAP-RELATED DISCLOSURES TO THE COMMISSION
Exhibit B-3, Section 7.2, pp. 83-84
SAP-related disclosures to the Commission

On page 84 of the Consolidated Information Filing, BC Hydro states:

> For all IT&T projects during the F2009 to F2016 period BC Hydro was not required under the Utilities Commission Act or by its own voluntary commitment to file a specific application for approval under section 44.2 of the Act as all projects fell below the $50 million threshold for Major Threshold Projects in place during F2007 to F2010, and below the $20 million threshold for IT&T projects under BC Hydro's Capital Project Filing Guideline that came into effect in July 2010 (F2011).

32.1 At what stage in the development of an IT&T project does BC Hydro's regulatory department become involved and at what point does the regulatory department make recommendations to the Executive Team (and/or Board) regarding disclosure of the project to the Commission? Please explain and provide examples of specific SAP-related projects, including the PPM, PSW, and Supply Chain Applications projects.

BC Hydro
Power smart

Acronyms and Abbreviations

A

AFC	Audit and Finance Committee
ARMC	Audit and Risk Management Committee
ARRA	Amended Revenue Requirements Application

B

BCH	BC Hydro
BCTC	BC Transmission Corporation

C

CCFT	Customer Connections Foundational Technology
CCS	Customer Care and Services
CCM	Construction and Contract Management
CIDC	Calgary Internet Data Centre
CLE	Common Logging and Exception Handling
CRM	Customer Relationship Management
CSOPC	Customer Service, Operations & Planning Committee

D

DEF	Definition
DMS	Distribution Management System
DR	Disaster Recovery
DWS	Distribution Work Scheduling

E

EAR	Expenditure Authorization Request

ERP	Enterprise Resource Planning
ESB	Enterprise Service Bus
EXEC	Executive

F

F	Fiscal
FSR	Financial System Replacement

G

GIS	Geographical Information System
GRC	Governance, Risk and Compliance

H

HCM	Human Capital Management
HR	Human Resources

I

IDN	Identification
IDM	Identity Management
IMP	Implementation
IOMA	Initiative Operating Maintenance and Administration
IT&T	Information Technology and Telecommunications
ITDSP	Information Technology Delivery Standard Practices
ITIL	Information Technology Infrastructure Library

K

KIDC	Kamloops Internet Data Centre

L

LGS	Large General Service

M

MAPP	Management and Accounting Policies and Procedures
MDG	Master Data Governance
MGMT	Management

O

OCIO	Office of the Chief Information Officer
OMA	Operating Maintenance and Administration

P

PCER	Project Completion and Evaluation Report
PMO	Project Management Office
PPM	Project and Portfolio Management
PSW	Plan Schedule Work

R

RRA	Revenue Requirements Application

S

SAP	SAP AG (Germany)
SCA	Supply Chain Applications
SCS	Supply Chain Solutions
SCM	Supply Chain Management
SD&M	Schedule, Dispatch & Mobility

SHE	Safety, Health and Environment
SMI	Smart Metering Infrastructure

T

T&D	Transmission & Distribution
TBD	To be deteremined
TIBCO	Tibco Software Inc.

W

WIP	Work in progress

1.0 A. BACKGROUND

Reference: SAP AS THE DEFAULT ENTERPRISE RESOURCE PLANNING (ERP) SOLUTION (2008-2009)
Exhibit B-3, Consolidated Information Filing: Section 2.2, p. 8; Section 7.2, Table 13, p. 84; Attachment 5, pp. 4, 7, 9, 14; Attachments 33-35
SAP Enterprise program common infrastructure

BC Hydro states on page 8 of the Consolidated Information Filing: "In May 2008, BC Hydro's Executive Team (ET) agreed that BC Hydro should adopt a high-level strategy to move incrementally to a single ERP system and to the use of SAP as the default ERP solution (SAP Strategy)."
Footnote 17 on page 8 references Attachment 5 of the Consolidated Information Filing, which is the business case titled: "Office of the Chief Information Officer, SAP Enterprise Program Common Infrastructure, July 31, 2009 (July 2009 Common Infrastructure)."

Page 4 of Attachment 5 states: "The IT&T strategy therefore recommended deploying an SAP environment, and to incrementally deploy it in the financial and operational business groups over a 3-5 year period. The Executive Team (ET) endorsed this direction in May 2008."

1.1.1 Please clarify which "financial and operational business groups" BC Hydro is referring to on page 4 of the Business Case.

RESPONSE:

This is a general statement indicating that SAP can be deployed in BC Hydro where ERP functionality is used, such as for the finance, distribution and generation business groups.

1.0 A. BACKGROUND

Reference: SAP AS THE DEFAULT ENTERPRISE RESOURCE PLANNING (ERP) SOLUTION (2008-2009)
Exhibit B-3, Consolidated Information Filing: Section 2.2, p. 8; Section 7.2, Table 13, p. 84; Attachment 5, pp. 4, 7, 9, 14; Attachments 33-35
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Page 4 of Attachment 5 states: "The IT&T strategy therefore recommended deploying an SAP environment, and to incrementally deploy it in the financial and operational business groups over a 3-5 year period. The Executive Team (ET) endorsed this direction in May 2008."

1.1.2 Please clarify which SAP projects/systems were contemplated as part of the "SAP environment" to be "incrementally deployed over a 3-5 year period" as described on page 4 of the Business Case.

RESPONSE:

With the adoption of SAP as BC Hydro's default technology standard for ERP applications, it was anticipated that SAP would be used as the platform for future ERP projects as: i) business requirements emerge, ii) SAP is determined to meet the business need, and iii) the business case is approved. As outlined in Table 1 in section 2.3 of the Consolidated Information Filing, BC Hydro anticipated that SAP related projects would be undertaken across all of the business process areas indicated in Table 1. BC Hydro had this perspective in 2008/2009 and continues to have this perspective today.

As early as May 24, 2007 in the ARMC IT&T Update, there is indication on pages 1-2 that projects were being contemplated in the financial, human resources, customer care extensions, work management and asset management areas, with a subsequent ARMC update (see November 18, 2008) indicating additional areas including PPM and Safety.

Specifically, the BC Hydro Information Technology and Telecommunications Five Year Plan - Year 2 (approved in November 2009, at a similar time to the SAP Enterprise Program Common Infrastructure business case), indicates that the following projects were planned (see the "Project Plan" section, pages 27 to 32):

- **Financials: FSR;**
- **Project Management: PPM;**
- **Customer: CRM;**
- **Work Management: Plan, Schedule and other advanced solutions;**
- **Supply Chain: support work program requirements; and**
- **Human Resources: HR/Payroll, etc.**

1.0 A. BACKGROUND

Reference: SAP AS THE DEFAULT ENTERPRISE RESOURCE PLANNING (ERP) SOLUTION (2008-2009)
Exhibit B-3, Consolidated Information Filing: Section 2.2, p. 8; Section 7.2, Table 13, p. 84; Attachment 5, pp. 4, 7, 9, 14; Attachments 33-35
SAP Enterprise program common infrastructure

BC Hydro further states on page 7 of Attachment 5:

BC Hydro will proceed with a substantial amount of SAP related work. Even though SAP becomes the default ERP system for major projects, there still needs to be a high level demonstrable degree of business process fit (i.e. 80/20). At this stage this assumption is solid since work is proceeding on numerous fronts including Customer Care extensions, Finance, Project Management and Reporting. [emphasis added]

Under the "Mitigation Strategy" to address the risk titled "Availability of Resources to implement scope" on page 14 of Attachment 5, it states: "Resources to implement these scope items have been identified and planned, and will be closely coordinated with other activities currently underway in Customer Care, FSR and PPM."

On page 9 of the Business Case (Attachment 5), BC Hydro states: "Now that BC Hydro will have Customer Care, Financials and Project Management business processes all hosted within SAP…"

1.1.3 Please confirm, or explain otherwise, that "FSR" refers to the Financial Systems Replacement project and "PPM" refers to the Project & Portfolio Management project. Please also explain what "80/20" means in terms of business process fit.

RESPONSE:

Confirmed.

The 80/20 concept is explained on page 1 of the May 24, 2007 ARMC IT&T Update at Attachment 1 to the Consolidated Information Filing. For further clarity, the idea behind "80/20" was that BC Hydro had previously sought to "automate 100% of our needs", but this had contributed to application proliferation and overly complex systems. The "80/20" concept implied that BC Hydro should instead seek to automate the most important requirements (i.e., 80 per cent), which should provide adequate business process fit.

1.0 A. BACKGROUND

Reference: SAP AS THE DEFAULT ENTERPRISE RESOURCE PLANNING (ERP) SOLUTION (2008-2009)
Exhibit B-3, Consolidated Information Filing: Section 2.2, p. 8; Section 7.2, Table 13, p. 84; Attachment 5, pp. 4, 7, 9, 14; Attachments 33-35
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On page 9 of the Business Case (Attachment 5), BC Hydro states: "Now that BC Hydro will have Customer Care, Financials and Project Management business processes all hosted within SAP…"

1.1.4 Based on the descriptions on pages 7, 9 and 14 of the Business Case, please confirm, or explain otherwise, that in 2009 BC Hydro had, at minimum, commenced work on both the Financial Systems Replacement project and the Project & Portfolio Management project.

RESPONSE:

Confirmed. Both of these projects were initiated in F2009. The implementation phases for FSR and PPM began in July 2009 and December 2009, respectively.

Please note that in December 2007 the PeopleSoft Financials Upgrade project Business Case and EAR was approved. Subsequently, this project was at times referred to as the Enterprise Financials Upgrade project. However, once the decision was made to use SAP as the default solution for ERP applications, BC Hydro began a process to evaluate SAP Financials through the Financial System Replacement project, whose first Business Case and EAR was approved in August 2008. The FSR project was also sometimes referred to as the Enterprise Financials Upgrade project.

1.0 A. BACKGROUND

Reference: SAP AS THE DEFAULT ENTERPRISE RESOURCE PLANNING (ERP) SOLUTION (2008-2009)
Exhibit B-3, Consolidated Information Filing: Section 2.2, p. 8; Section 7.2, Table 13, p. 84; Attachment 5, pp. 4, 7, 9, 14; Attachments 33-35
SAP Enterprise program common infrastructure

BC Hydro further states on page 7 of Attachment 5:

BC Hydro will proceed with a substantial amount of SAP related work. Even though SAP becomes the default ERP system for major projects, there still needs to be a high level demonstrable degree of business process fit (i.e. 80/20). At this stage this assumption is solid since work is proceeding on numerous fronts including Customer Care extensions, Finance, Project Management and Reporting. [emphasis added]

Under the "Mitigation Strategy" to address the risk titled "Availability of Resources to implement scope" on page 14 of Attachment 5, it states: "Resources to implement these scope items have been identified and planned, and will be closely coordinated with other activities currently underway in Customer Care, FSR and PPM."

On page 9 of the Business Case (Attachment 5), BC Hydro states: "Now that BC Hydro will have Customer Care, Financials and Project Management business processes all hosted within SAP…"

1.1.4 Based on the descriptions on pages 7, 9 and 14 of the Business Case, please confirm, or explain otherwise, that in 2009 BC Hydro had, at minimum, commenced work on both the Financial Systems Replacement project and the Project & Portfolio Management project.

1.1.4.1 If BC Hydro was in the process of planning other projects beyond the FSR and PPM projects, please provide the names and descriptions of these projects.

RESPONSE:

In 2009 BC Hydro was primarily focused on the FSR and PPM projects. Detailed planning work (i.e., project initiation activities) for other large projects had not yet commenced. As indicated in BC Hydro's response to BCUC IR 1.1.2, BC Hydro expected that additional SAP-related projects would be undertaken and such projects were included in the BC Hydro Information Technology and Telecommunications Five-Year Plan - Year 2.

1.0 A. BACKGROUND

Reference: SAP AS THE DEFAULT ENTERPRISE RESOURCE PLANNING (ERP) SOLUTION (2008-2009)
Exhibit B-3, Consolidated Information Filing: Section 2.2, p. 8; Section 7.2, Table 13, p. 84; Attachment 5, pp. 4, 7, 9, 14; Attachments 33-35
SAP Enterprise program common infrastructure

Table 13 on page 84 of the Consolidated Information Filing provides a list of BC Hydro filings with the Commission that included SAP-related disclosures.

1.1.5 Please confirm, or explain otherwise, that the first instance of BC Hydro notifying the Commission of its intent to proceed with the Financial Systems Replacement project was in its June 12, 2009 filing in compliance with Directive No. 56 of the F2009/F2010 Revenue Requirements Application (RRA) Decision (provided by BC Hydro as Attachment 31 to the Consolidated Information Filing).

RESPONSE:

Confirmed.

BC Hydro notes that it identified that the Enterprise Financials Upgrade project was in Identification phase in the F2009/F2010 RRA filed in February 2008. Please refer also to BC Hydro's response to BCUC IR 1.1.7.

1.0 A. BACKGROUND

Reference: SAP AS THE DEFAULT ENTERPRISE RESOURCE PLANNING (ERP) SOLUTION (2008-2009)
Exhibit B-3, Consolidated Information Filing: Section 2.2, p. 8; Section 7.2, Table 13, p. 84; Attachment 5, pp. 4, 7, 9, 14; Attachments 33-35
SAP Enterprise program common infrastructure

Table 13 on page 84 of the Consolidated Information Filing provides a list of BC Hydro filings with the Commission that included SAP-related disclosures.

1.1.6 Please confirm, or explain otherwise, that the first instance of BC Hydro providing notification to the public (i.e. parties other than the Commission) of the Financial Systems Replacement project was in its F2011 RRA (provided by BC Hydro as Attachments 33, 34 and 35).

RESPONSE:

Not confirmed. The first instance of notification to the public of the intent to proceed with the Financial Systems Replacement project occurred through BC Hydro's letter dated June 12, 2009 filed in compliance with Directive No. 56 of the F2009/F2010 RRA Decision (refer to Attachment 31 of the Consolidated Information Filing). This letter was sent to the Registered Intervener distribution list of the F2009/F2010 RRA.

In addition, the F2009/F2010 RRA reported to the public that as of June 2007 BC Hydro's enterprise financials system was no longer supported by the vendor and that a project (at that time named the Enterprise Financials Upgrade project) was in the Identification phase to determine whether the system should be upgraded or replaced.

1.0 A. BACKGROUND

Reference: SAP AS THE DEFAULT ENTERPRISE RESOURCE PLANNING (ERP) SOLUTION (2008-2009)
Exhibit B-3, Consolidated Information Filing: Section 2.2, p. 8; Section 7.2, Table 13, p. 84; Attachment 5, pp. 4, 7, 9, 14; Attachments 33-35
SAP Enterprise program common infrastructure

Attachment 33 contains an excerpt from Chapter 6 of the F2011 RRA which lists the Enterprise Financials Upgrade project under "Transformational Initiatives".

Attachment 34 provides an excerpt from Appendix I of the F2011 RRA, which includes the Enterprise Financials Upgrade project.

Attachment 35 provides an excerpt from Appendix J of the F2011 RRA, which includes a one-page project description of the Enterprise Financials Upgrade project.

1.1.7 Please explain why BC Hydro did not include in the project description, in Appendix J of the originally filed F2011 RRA, any reference to the fact that this project was previously titled the "Financial Systems Replacement" project.

RESPONSE:

For clarity, BC Hydro notes that the Enterprise Financials Upgrade project was named in reference to the expected upgrade of PeopleSoft. When the decision was made to investigate/blueprint SAP financials, the project was renamed/replaced by the Financial Systems Replacement project, where 'Replacement' referred to the investigation into replacing the existing PeopleSoft system instead of upgrading it.

Although this project is described in Appendix J of the F11 RRA as involving the migration of BC Hydro's financial system from PeopleSoft to SAP (that is, a 'replacement'), this question highlights that BC Hydro was unfortunately inconsistent in its naming of this project in the F11 RRA.

- **Chapter 5 of the F11 RRA refers to the Financial Systems Replacement project (refer to page 5-63 attached to this response); and**

- **Chapter 6 and Appendices I and J of the F11 RRA (and also Appendix I of the F12-F14 RRA) use the name Enterprise Financials Upgrade project.**

It is possible that the differing terminology could be explained by the fact that different teams work on Chapter 5 versus Chapter 6 (and Appendices I and J) of the RRAs and this was then missed during the review of final drafts.

- Software and hardware related expenditures of $4.3 million - this increase is primarily for ongoing operating expenditures for licenses and equipment required to operate applications and infrastructure that recently came into service, and the associated annual maintenance costs for technical support, fixes and upgrades. The capital initiatives driving these increases include the Financial Systems Replacement, Enterprise Service Bus, Storage Virtualization and Server Virtualization projects.

- Labour and consulting costs of $3.8 million - this increase is primarily for labour and consulting costs associated with new or enhanced teams to support the OCIO's role, including a new architecture team that supports the transformational initiatives, an enhanced service delivery team that supports enterprise applications and manages business processes, a new team to support the Financial Systems Replacement project, centralization of the team that supports the telecommunications services described above, as well as new portfolio management and business management teams. The increase also includes consulting expenditures to enhance service delivery capabilities.

- Initiative-related operating expenditures of $2.3 million - this increase is for operating activities that support IT&T capital initiatives, including scope definition and training. The capital initiatives driving these increases include the PPM and Plan & Schedule Work Management projects.

The operating cost increases in Finance and Corporate Resources are partially offset by cost reductions due to SLR adjustments, and targeted reductions in costs such as travel expenses and consulting services in all groups.

The FTEs for F2011 in Finance and Corporate Resources are expected to increase by 70 compared to F2010 RRA. The increase is primarily due to the move of the procurement function from ABS to BC Hydro, as well as 18 FTEs for a new Procurement Policies, Process and Controls group that ensures consistent application of policies and supplier management across BC Hydro, 19 FTEs in OCIO to support the functions and activities outlined above, and 7 FTEs to support the Financial System Replacement project and accounting initiatives.

1.0 A. BACKGROUND

Reference: SAP AS THE DEFAULT ENTERPRISE RESOURCE PLANNING (ERP) SOLUTION (2008-2009)
Exhibit B-3, Consolidated Information Filing: Section 2.2, p. 8; Section 7.2, Table 13, p. 84; Attachment 5, pp. 4, 7, 9, 14; Attachments 33-35
SAP Enterprise program common infrastructure

Attachment 33 contains an excerpt from Chapter 6 of the F2011 RRA which lists the Enterprise Financials Upgrade project under "Transformational Initiatives".

Attachment 34 provides an excerpt from Appendix I of the F2011 RRA, which includes the Enterprise Financials Upgrade project.

Attachment 35 provides an excerpt from Appendix J of the F2011 RRA, which includes a one-page project description of the Enterprise Financials Upgrade project.

1.1.8 Please explain why in the Enterprise Financials Upgrade project description in Appendix J of the F2011 RRA BC Hydro includes a discussion of three alternatives, including the alternative "Re-implement a new version of PeopleSoft Financials" given that BC Hydro was already in the implementation phase of adopting the SAP Financials platform.

RESPONSE:

Appendix J of a BC Hydro Revenue Requirements Application (RRA) provides project descriptions for each capital project with a gross value over $5 million that is forecast to be carried out during the test period of the respective RRA. Appendix J uses the same project description template whether the project is in the Identification, Definition or Implementation phase at the time of RRA filing. In the case of a project in the Implementation phase, where the solution has been chosen and is being implemented, the Discussion of Alternatives section of the Appendix J template will discuss the alternatives that were considered in the earlier phases. The Appendix J template has been an accepted part of BC Hydro's RRAs since F2007/F2008.

A new version of PeopleSoft Financials is an alternative that was considered during the Identification phase for the Enterprise Financials Upgrade project.

1.0 A. BACKGROUND

Reference: SAP AS THE DEFAULT ENTERPRISE RESOURCE PLANNING (ERP) SOLUTION (2008-2009)
Exhibit B-3, Consolidated Information Filing: Section 2.2, p. 8; Section 7.2, Table 13, p. 84; Attachment 5, pp. 4, 7, 9, 14; Attachments 33-35
SAP Enterprise program common infrastructure

Attachment 33 contains an excerpt from Chapter 6 of the F2011 RRA which lists the Enterprise Financials Upgrade project under "Transformational Initiatives".

Attachment 34 provides an excerpt from Appendix I of the F2011 RRA, which includes the Enterprise Financials Upgrade project.

Attachment 35 provides an excerpt from Appendix J of the F2011 RRA, which includes a one-page project description of the Enterprise Financials Upgrade project.

1.1.9 Please confirm, or explain otherwise, that the first instance of BC Hydro providing notification to the Commission of the PPM project was in its F2011 RRA (provided by BC Hydro as Attachments 33, 34 and 35).

RESPONSE:

Confirmed.

The F2011 RRA Appendix J summary for the PPM project includes the following statement:

> **Additional Information: Initiatives examining project management practices within EARG [Engineering Aboriginal Relations and Generation business group] have occurred previously (back to 2006), including some non-system deliverables that formed the basis for the PPM project. PPM was not formed at the time of the last filing.**

1.0 A. BACKGROUND

Reference: SAP AS THE DEFAULT ENTERPRISE RESOURCE PLANNING (ERP) SOLUTION (2008-2009)
Exhibit B-3, Consolidated Information Filing: Section 2.2, p. 8; Section 7.2, Table 13, p. 84; Attachment 5, pp. 4, 7, 9, 14; Attachments 33-35
SAP Enterprise program common infrastructure

Attachment 35 provides an excerpt from Appendix J of the F2011 RRA, which includes a one-page project description of the PPM project. The Forecast Capital Cost listed for the PPM project is $15 million and the project description includes a discussion of two "waves" of the project implementation.

1.1.10 Did the forecast capital cost of $15 million listed in Appendix J of the F2011 RRA encompass both Wave 1 and Wave 2 of the PPM project? If not, please explain why not.

RESPONSE:

Yes. The capital expenditures cost estimate of $15 million for the PPM project presented in the F2011 RRA Appendix J included costs for both Wave 1 and Wave 2 of the project. The Wave 1 timeline was driven by the Financial System Replacement project and the requirement to replace InfoPM, and Wave 2 built upon the systems implemented in Wave 1 enhancing the PPM capabilities and supported rollout to the business.

2.0 A. BACKGROUND

Reference: SAP AS THE DEFAULT ERP SOLUTION (2008-2009)
Exhibit B-3: Section 2.2, pp. 11-12; Attachments 2, 6, 7
Executive Summary: IT&T Update on strategy development, submitted by: Corporate Resources, May 22, 2008 Audit and Risk Management Committee Meeting of the Board (May 2008 ARMC)

Attachment 2 of BC Hydro's Consolidated Information Filing provides the first four pages of the Information Technology and Telecommunications (IT&T) Update on Strategy Development Executive Summary and Attachment 6 provides the last two pages of the aforementioned executive summary which contain the Chief Information Officer's (CIOs) notes.

1.2.1 Please explain why the last two pages of the Executive Summary of the May 2008 IT&T Strategy Development document containing the CIO's notes were omitted from BC Hydro's original filing on January 8, 2016 in response to the Adrian Dix complaint.

RESPONSE:

BC Hydro's records indicate that only the first four pages of the May 2008 IT&T Strategy Development document were provided to the ARMC. BC Hydro does not have a record of whether the CIO's notes (that is, the final two pages of Attachment 6 to the Consolidated Information Filing) were provided to the ARMC in advance of or during the May 22, 2008 meeting.

BC Hydro clarified this record in its Consolidated Information Filing at page 11, line 10 to page 12, line 4 and related footnotes. BC Hydro acknowledges that it could have also included this clarification in its January 8, 2016 response. BC Hydro noted that the executive summary containing the CIO's notes was already on the record attached as Tab 5 to the December 8, 2015 Adrian Dix complaint.

2.0 A. BACKGROUND

Reference: SAP AS THE DEFAULT ERP SOLUTION (2008-2009)
Exhibit B-3: Section 2.2, pp. 11-12; Attachments 2, 6, 7
Executive Summary: IT&T Update on strategy development, submitted by: Corporate Resources, May 22, 2008 Audit and Risk Management Committee Meeting of the Board (May 2008 ARMC)

Page 5 of Attachment 6 of the Consolidated Information Filing states under the heading "Resolutions from ET Meeting May 12th 2008": "The following recommendations were approved at an extended team including executive team members and representatives from the business groups."

1.2.2 Please explain who comprised the Executive Team, including job titles and descriptions.

RESPONSE:

The Executive Team members in May 2008 and their respective job titles and descriptions are as set out in the table below. The Terms of Reference for the Chief Executive Officer in effect in May 2008 is attached as Attachment 1.

Executive Team Member	Title	Description
Bob Elton	**President & CEO**	**Refer to Attachment 1.** **The Governance Manual in which the Terms of Reference reside was updated on May 22, 2008; however, no changes were made to the Terms of Reference for the CEO.**
Bev Van Ruyven	**Executive Vice-President, Customer Care and Conservation**	**Responsible for providing long-term resource planning and acquisition and customer care services, and delivering Power Smart programs.**
Ray Stewart	**Chief Safety, Health and Environment Officer**	**Responsible for strategic direction and governance in relation to occupational safety and health, environment and sustainability, public safety, emergency management, security and dam safety matters.**

Executive Team Member	Title	Description
Susan Yurkovich	**Senior Vice-President, Corporate Affairs**	**Responsible for marketing and strategic communications, community and stakeholder engagement, community investment, as well as corporate projects, including Site C and the 2010 Olympic Initiative**
Gary Rodford	**Senior Vice-President, Field Operations**	**Responsible for delivering electricity safely and reliably to customers, including extension and connections services, as well as emergency response and restoration services.**
Chris O'Riley	**Senior Vice-President, Engineering, Aboriginal Relations and Generation**	**Responsible for BC Hydro's generating assets, engineering services for BC Hydro and BCTC, and for leading the establishment of mutually beneficial relationship with Aboriginal peoples.**
Trish Pekeles	**Acting Chief Financial Officer**	**Responsible for several enterprise-wide functions, including finance, regulatory, risk management, information technology, procurement, legal, properties and strategy.**
Teresa Conway	**President & CEO, Powerex**	**Responsible for energy marketing and trade activities to help optimize BC Hydro electric system resources.**
Lois Nahirney	**Acting Chief HR Officer**	**Responsible for attraction and workforce planning, organizational effectiveness and total rewards programs.**

TERMS OF REFERENCE FOR THE CHIEF EXECUTIVE OFFICER

Introduction

The Chief Executive Officer is the senior management officer of BC Hydro.

While the Board supports the concept that the role of Chief Executive Officer is separate from that of Board Chair, it acknowledges that there may be exceptional circumstances when it is appropriate to combine the roles of Chair and Chief Executive Officer. Refer to *Tab 2 - Chair of the Board* - for more discussion on this matter.

The Board also acknowledges that it is usual practice for the Chief Executive Officer to be appointed by the Shareholder as a member of the Board of Directors. However, in those instances when the Chief Executive Officer has not been appointed to the Board, it will be Board policy that the Chief Executive Officer can expect to receive the same information as any other Director, except that information relating to the Chief Executive Officer's performance, as appropriate. Refer to Tab 2 - *Chief Executive Officer - Board Appointment or Otherwise.*

Chief Executive Officer's Duties and Responsibilities

- Lead and manage BC Hydro within the parameters established by the Board and its Committees.
- Report to the Board.
- Develop and recommend the strategic business plan to the Board and successfully implement corresponding corporate operational plans, capital plans and other supporting initiatives.
- Ensure the Corporation's public policy responsibilities that have been assigned by the Government have been incorporated into the strategic business plan.
- Direct and monitor the Corporation's activities in a manner that ensures the assets of BC Hydro are safeguarded and optimized.
- Develop and implement operational policies to guide BC Hydro within the limits prescribed by the framework of the strategic directions adopted by the Board.
- Ensure the integrity of BC Hydro's internal control and management systems.
- Identify and report to the Board principal risks of the business and ensure the implementation of systems to manage these risks.
- Ensure the safe efficient operation of BC Hydro and ensure compliance with BC Hydro's environment, health and safety policies and practices. Refer to Tab 5 detailing specific Environmental Management System responsibilities delegated to the Chief Executive Officer by the Board of Directors.
- Ensure BC Hydro achieves and maintains a satisfactory competitive position within its industry and a high standard for its products and services.
- Develop and recommend to the Board the overall corporate organizational structure.
- Prior to appointing Vice-Presidents, review their appointment with the Board.
- Annually establish and maintain a Board approved plan for senior management development and succession.
- Provide the Board, at Board and Committee meetings, with exposure to the Corporation's key management.

- Together with the Chair, act as a primary spokesperson for BC Hydro and oversee the Corporation's interfaces with the Government and other stakeholders including:
  - developing and implementing a communications program; and
  - representing the Corporation in its interface with Government, regulatory bodies and other stakeholders.
- Collaborate closely and rigorously exchange information with the Chair:
  - to maintain a close liaison regarding communication strategies with the Government and other stakeholders; and
  - to review material issues and to ensure the Chair and other Directors are provided with relevant and timely information.
- Foster a corporate culture that promotes ethical practices and encourages individual integrity and social responsibility.
- When considering any significant public service commitments and/or accepting outside Board appointments, seek Board approval and ensure appointments are in accordance with applicable Government policies.
- Seek Board approval for expenditures, revenue measures, leases or other actions or transactions falling outside the plans approved by the Board.

2.0 A. BACKGROUND

Reference: SAP AS THE DEFAULT ERP SOLUTION (2008-2009)
Exhibit B-3: Section 2.2, pp. 11-12; Attachments 2, 6, 7
Executive Summary: IT&T Update on strategy development, submitted by: Corporate Resources, May 22, 2008 Audit and Risk Management Committee Meeting of the Board (May 2008 ARMC)

Page 5 of Attachment 6 of the Consolidated Information Filing states under the heading "Resolutions from ET Meeting May 12th 2008": "The following recommendations were approved at an extended team including executive team members and representatives from the business groups."

1.2.3 When was the original meeting which resulted in the first four pages of the Executive Summary (i.e. Attachment 2) held and who was in attendance?

RESPONSE:

The Executive Summary document provided as Attachment 2 of the Consolidated Information Filing (Exhibit B-3) was prepared by BC Hydro's Chief Information Officer Mr. Stuckert and Mr. Reid (at the time Mr. Reid was a consultant to BC Hydro with the title of Executive Project Advisor), with direction from Chief Executive Officer Mr. Elton. The document was prepared for the May 22, 2008 meeting of the Audit and Risk Management Committee of the Board.

Mr. Stuckert prepared the initial draft with input from Mr. Reid (refer to Attachment 1: 12:12 4/20/08 email from Don Stuckert to Charles Reid and Acting Chief Financial Officer Trish Pekeles regarding draft document, 1:27 4/20/08 email from Charles Reid to Don Stuckert and Trish Pekeles commenting on document, and 10:46 4/21/08 email from Don Stuckert to Charles Reid and Trish Pekeles responding to comments and attaching draft document).

On April 28, 2008, following a review of the draft document with Mr. Elton, Mr. Reid conveyed to Mr. Stuckert that "it is obvious that Bob [Elton] is still uncomfortable with putting this forward as our 'final' IT strategy and would prefer we position it as an 'update'. We can discuss, I need to reword a few things to nuance this in the Exec summary, and not make some choices seem so final such as SAP and People soft 8 vs 9 and so on." (refer to Attachment 2)

Mr. Reid revised the document to make it clear that BC Hydro continues to consider the recommendation of deploying an SAP environment. (Refer to Attachment 3: 4:55 p.m. 4/28/08 email from Traci Alexander on behalf of Charles Reid to Don Stuckert and Meena Lee attaching draft document).

It appears that the document was finalised by Mr. Reid on April 29, 2008 (refer to Attachment 4: 4:31 4/28/08 email from Charles Reid to Don Stuckert noting Charles needs to finish the materials by "tomorrow").

From: Stuckert, Don </O=BCHYDRO/OU=LM6/CN=RECIPIENTS/CN=DSTUCKER>
Sent: 04/21/2008 10:46:45 am
To: 'Charles Reid' [redacted]; Pekeles, Trish <Trish.Pekeles@bchydro.com>
Cc:
Bcc:
Subject: RE: IT&T strategy

Hi Charles

Thanks for your comments. I have attached an updated version of the overall plan with the executive summary in front. I didn't change the characteristics as they are in priority from overall management issues, through delivery issues, financial considerations, resource issues to technology issues.

WRT to the desktops – we do have more pc's then people as a number of employees have a desktop and a laptop. We also don't know how many PDA's we have and they are not included in this number.

I have not cancelled any meetings yet today but can if necessary.

Don

Don Stuckert

Acting CIO, BC Hydro

don.stuckert@bchydro.bc.ca

604.319.4171

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From: Charles Reid [redacted]

Sent: 2008, April 20 1:27 PM
To: Stuckert, Don; Pekeles, Trish
Subject: RE:

Hi Don,

Read the summary and it looks good. I would adjust some of the language slightly for clarity in a few areas (plus a few missing words), but overall I think we are getting there. If I was to adjust anything else it would just be to consider the length of the summary itself, we can talk about that. The whole IT strategy should be considered a communications document about philosophy and approach, vs a technical document. In the most effective communication, "you tell them what you are going to tell them, you tell them, and then you tell them what you told them".

I had a few questions about the resources applied to IT, it wasn't clear to me about the different numbers you quoted, so you can explain that when we talk, and I was surprised that we have 6500 desktops. I didn't think we had that many people, or does the desktop number include laptops?

I like the list of negatives characteristics you supplied but would consider re-ordering them from worst to least, if they haven't already been listed that way. To me, the annual dollar spend, the lack of coordination, the growing people resources, the numbers of servers/pc's and the data bases are a real concern.

Hopefully we can connect on Monday. I assume that you have made the adjustments we discussed to the body of the document as well, as it would be good to see a full set with all the changes to date.

Thanks

Charles

———

From: Stuckert, Don [mailto:Don.Stuckert@bchydro.com]
Sent: 20 April 2008 12:12
To: Pekeles, Trish; [redacted]
Cc: Reid, Charles
Subject:

Hi Charles / Trish

Please find attached a draft summary for the IT&T strategy. I will include it in the front of the current draft strategy and can be used for the RMC deliverable.

We can review it on Monday. Trish, I know you are in town only on Monday this week so please let me know when you would like to meet and I will adjust my schedule. D

Don

Don Stuckert

Acting CIO, BC Hydro

don.stuckert@bchydro.bc.ca

604.319.4171

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1 Attachment

EXECUTIVE SUMMARY

BC Hydro has a clear mandate and strategy to be a leader in conservation and energy efficiency. We enable our customers to be energy conservationists while improving our generation and distribution facilities as part of the strategy. This is transforming our business and operations.

Efficient and effective information technology and telecommunications (IT&T) systems and operations will enable this change and transformation. This means define a strategy to enable the business, design to remove any current problems and establish a clear and do able plan with the right resources and organizational attributes.

One Hydro strategy for its stakeholders, customers and operations is foundational for BC Hydro to meet its goals and objectives. Within the BC Hydro strategy, the individual business groups are developing their strategies to meet their operational goals and objectives.

These initiatives set a direction for IT&T to define a strategy that will focus on transformational systems and operations. The current IT&T systems and operations within Hydro will need to migrate to a stronger, more robust environment to enable the business effectively.

The current state of IT&T systems and operations has had mixed results in supporting the business. As we move to an enterprise state and the strategic use of IT&T, we require an overall strategy going forward but it must be one that is incremental and provide increased value to the business.

Over the past few years, the deployment of IT&T was driven by the individual business units and addressed their specific needs. While this met some of those needs, it created a number of negative characteristics to develop:

- No overall governance of the IT&T investment. Individual business groups manage their budgets and action plans. We had over 400 projects last year in the business with many projects late or unfinished. Without overall governance, it is difficult to plan and oversee what is best for the overall organization.

- Project success is based on four key issues – active and participatory involvement of the executive, priority setting and managing the scope of work, ensuring the right involvement of the business and building an environment for change and sustainability. We have struggled in all four areas and as a result have not seen the project delivery or the operational benefits we expected as frequently as we should have.

- We spend in excess of $45million in capital investment on IT&T and another $72m in operating within the CIO. While the dollars are in line with other organizations, if we had our overall priorities better defined, we could achieve better results.

These costs only reflect the CIO budget and do not include the individual expenditure in the business units for staff, project work not through CIO and some telecommunications costs (e.g. radio).

- Implementing systems to support the business requires a focus on change management and sustainability. Many of the initiatives have had difficulty in reflecting the changes needed and the sustainment of those changes to meet the business benefits.

- Frequently, business solutions were driven by a software solution. This has resulted in many instances of the software not meeting the business needs after implementation.

- Development of individual systems and more importantly, databases. We have over 600+ applications (not including the many spreadsheet applications in use) and 200+ databases supporting our business. Included in this mix is the use of four large ERP (enterprise resource planning) systems. This has resulted in a very difficult environment to support and sustain. It has also become difficult to find and

report information for finance and operations without tremendous manual work and multiple sources of data.

- Lack of priority setting for resources. While the IT&T resources are required across the organization, there is no overall priority setting to best utilize those resources. While in each area, it may have seemed reasonable, too much work and too few people were causing projects to start but not finish or finish without the desired results.

- IT&T resources in the business, ABS and CIO. As a result of confidence in delivery, lack of skilled resources and focus on business group needs , the number of resources has expanded to over 540 ABS resources and 280 business unit resources (50 in CIO and does not include Powersmart). Shadow IT&T organizations have developed.

- Quickly expanding infrastructure environment. To meet the needs of the business, the desktop and server environments have expanded to over 6500 desktops and over 900 servers. This is a complex and difficult environment to support and it is causing increasing over runs in operating costs.

- Telecommunications accountability and operations has been distributed across many business units. The result of has created a very difficult environment to support and maintain. With the advent of SMI and a need for an enterprise wide integrated network, it will be very difficult to deliver in the current structure and systems.

We embarked on developing the IT&T strategy with the objectives and current state knowledge in mind. First, a key activity was to work with the business groups in the development of their operating plans and strategies. These strategies, along with the enterprise strategy, enabled IT&T to develop its plan. Key principles were established:

1. Overall governance group made up of the ET members
2. Cross-functional business process maps to enable common views of business process and systems to meet the One Hydro and business group needs.
3. Agreed principles for the enablement of IT&T solutions including end to end design, 80/20 rule, design for tool time, and a single source of truthful information

From these foundations, a strategy for IT&T architectures and operations/organizations was developed. Below we have summarized the directions and recommendations.

IT&T ARCHITECTURES

After the work we did with the businesses in developing their business operations and process strategy, we developed the IT&T architecture strategy. These architectures define the framework to build our systems. They are integrated, secure, meet the business process needs, information needs and can be sustained in a very effective manner. The IT&T strategy has a number of system architecture components. There are two key components: Application/database and telecommunications.

Application/database architecture

A core platform, performing the majority of the work, to meet the business needs and to provide a more sustainable environment was developed.

We recognized that we had deployed four different ERP solutions. These solutions were analyzed and two options were considered: best of breed - taking the current ERP solutions and integrating the best components and a single ERP (SAP).

The analysis is based on cross-functional process needs, integrated databases for single source, and total cost of ownership. We also looked at what the industry is using and what was the best practice. Clearly, SAP was the

industry leader and there have been many successful deployments in utilities similar to BC Hydro. So, from the internal analysis and the industry success, we recommend deploying an SAP environment. We currently use SAP in the customer side and would INCREMENTALLY deploy it in the financial and operational business groups over a 3-5 year period.

Telecommunications architecture

The architecture to date addresses primary business systems and the transmission microwave network. The future state of telecommunications in BC Hydro will see the need for mission critical networks to support advanced applications such as the smart grid and smart meters. As well, as the technologies are converging to similar standards, integrated security and end-to-end performance.

The architecture design will meet the advance needs of the business and the smart grid and is based on internet protocols (IP), wireless/radio integrated networks and large-scale fiber and microwave backbones.

Other architecture components include: user interface (how we build the person/system interface to maximize usability), security architecture, common infrastructure and platforms.

OPERATIONS AND ORGANIZATIONS

To ensure we meet our goals and objectives, we need to re-align who and how we deliver the solutions to meet the business needs. There are five key areas:

1. Governance – a single governance group overseeing the key projects and operations. This change has been implemented. The CIO reports to this group.
2. Roles of architects – use architects in business process and technology to ensure frameworks and quality are designed into the enterprise architecture. This has been implemented within the CIO organization.
3. Role of change managers – to provide an oversight to all the change that is to occur in the organization and is responsible for the overall organizational change.
4. Roles of business – the business systems groups must retain the business and change responsibilities to ensure the systems are delivered and sustainable. More focus on the business process design, analysis, implementation, and less on the technical.
5. Roles of IT&T - to ensure project success and operational efficiencies for the overall organization. A project office monitoring the top 30 projects and a redefinition of the delivery services for ABS and other groups has been implemented. It is recommended to move the telecommunications groups under a single management structure in the CIO's office.

The next areas of strategy relate to the plans and timing of how we implement the strategy and the costs.

First, the IT&T strategy implementation is defined as part of the business priorities and plans. Second, we implement the strategy in an incremental manner to ensure the right people are doing the right things at the right time. Two key aspects of the plan include project implementations and organizational implementations.

Projects: We have develop a project interdependency chart that shows the overall plan to roll out the key projects along with an impact assessment of the end users and organizations This allows us to oversee, plan and execute knowing the impacts and outcomes. Key projects include SMI, P2P, Field operations top 3 initiatives, EARG top three initiatives, and the top One Hydro initiatives for customer, HR and finance. These would be carried out over the next 3- 5 years and does allow for shorter term projects to address immediate business needs.

Operations and Organization: The key operational and organizational changes within the CIO office are underway. The key change management and realignments to the business group recommendations need to be implemented.

Finally, we summarize the financial aspects of the strategy, including capital and operating.

Capital: The majority of the project implementations would be carried out under the current capital plan of $45m per year over the next three years. Some of the projects that will need business cases defined and will require additional capital investment. An incremental amount of $32 -38m may be required over the three years. We will refine this incremental amount as we develop the plans for the following projects: EARG, field operations, safety, finance, and HR/payroll and project management.

Operating: We anticipate, with the planned projects, we would have a reduced sustainment cost for IT. This reduced amount of $6-8m per year is primarily due to reduced sustainment costs within the CIO office. We have not developed the additional savings that may exist in the business units. As well, we did not develop the additional business benefits due from the new projects or optimization within the business units.

In summary, the IT&T strategy begins with defining the business operations strategy to meet the future operating environment of BC Hydro. IT addresses what technology architectures are needed to enable the business and the removal of current roadblocks and problem areas. We have defined the roles and organizational aspects that need to be refined to maximize the opportunity for success. Finally, we have developed a very do able plan that takes into consideration, current programs that will yield business benefits, the interdependencies to allow us to manage the change and resources and optimizes our financial investments.

BC Hydro CIO Purpose

To ensure information technology and telecommunication is enabling BC Hydro in meeting its business and conservation objectives. Our commitment is to be innovative, timely and efficient in delivering technology-enabled business.

To fulfill our purpose we describe:

- WHY we need a clear purpose and strategy
- WHAT needs to be done to meet the business objectives
- WHO and HOW we need to deliver the solutions
- WHEN we need to do it and the overall plan.
- WHAT are the financial implications

WHY we need to set out our purpose and strategy

To meet the objectives of the business and energy plans set out by BC Hydro:

- Conservation leadership
- Environmental leadership
- Reliability
- Customer satisfaction
- Safety
- Cost efficiency
- Innovation

Information technology and telecommunications (IT&T) should enable the business to achieve its goals. Specifically, how the IT&T is managed, how projects are delivered and how day to day operations support the business is critical to the success of meeting these objectives.

The management of the IT&T investment is not currently able to best support the business. The symptoms of this include:

- the emergence of IT&T organizations with the business groups -200+ people working in the units
- a complex, multi-vendor software environments – 600+ applications and 200+ databases
- higher than normal use of consultants – over 200
- lost skills – ABS could not retain the transferred resources and BC Hydro does not have the resources
- delayed or incomplete projects
- lack of standards and enterprise consistency
- poor service and response of ABSU
- expenditures for IT&T in the business and OCIO that is likely causing overinvestment or at least a poor use of funds
- and a general lack of confidence from the ET

With the key objectives in mind, BC Hydro is defining its vision for services and operations through the capital planning process and the execution of key business projects. These projects will create a new work environment and customer service world that will be dependant on efficient and effective technology solutions.

Equally important, the directions are very much focussed around "One Hydro". This requires a convergence of business process and technology solutions to be more aligned with the single enterprise view. What "One Hydro" represents to the business process and technology investment is that we look at cross functional processes that drive solution designs into the business groups and develop technology solutions to address enterprise needs first and foremost.

The executive team is prioritizing the initiatives and technology investment so the organization can maximize their investments and organize the resources to ensure delivery of the new solutions. These priorities are based on the objectives above along with the regulatory requirements. They should be categorized into:

- Run: keep the business operating (maintain, sustain)
- Grow: improve the business operations and customer service (develop)
- Transform: change the way the business operates, business leadership

Currently the IT&T investments (capital and OMA) are primarily run and grow-based and account for 70% or more of the investment. One Hydro will require at least 50% of the investment to go towards transform. This has a significant impact on the priority setting and for the allocation of IT and business resources to our ability to deliver the projects and achieve the benefits.

Below are the key initiatives that are driving, in parallel, the development the IT strategy.

There are significant risks for the company if the key initiatives not prioritized, aligned and managed well. The ability for the business resources and technical resources to meet on time / on budget / high quality goals will be compromised.

Our "what, how, who and when" sections of this strategy will address how the IT&T strategy be defined.

WHAT needs to be done?

To fulfill the strategy to support the business, there are four layers of solutions (or architecture) that are needed:

1. The business strategy and the objectives set out in the energy and business plans for BC Hydro

2. The business process architecture defines business operational processes to run the business. The processes should address the enterprise (common processes) business as well as the business groups.

3. The technology architecture required to deliver the business processes to meet the business objectives. The technology architecture defines the applications, information/databases, infrastructure, and telecommunications solutions required to deliver the business processes. This includes the principles in which the CIO delivers to the enterprise business and the individual lines of business

Over the coming months, the business groups and the CIO's office are preparing business operations strategies that will define process and technology solutions for the enterprise and the specific BG. It is imperative that the strategies meet both the corporate and BG current and future needs. While each strategy will have enterprise and BG aspects, some common principles do apply.

These principles include:

1. Business Strategy Drives Business Process design
The business strategy and objectives drive the business process architecture. They define the metrics to which the processes must deliver to. Conservation results, cost efficiencies, operable efficiencies, and maximizing the team metrics must be enabled by the business process and technology.

2. Business Process is defined both in terms of Enterprise and Line of Business
Each business process can be defined as meeting enterprise and BG needs. They can have different levels of design ranging from 100% BG driven to 100% enterprise driven base upon what meets the needs of the enterprise **and** BG. When analysing our business processes, we will define how much affects the enterprise and the business group. For example, an employee expense process might be 100% enterprise designed whereas a work scheduling process might be 60% the same across the enterprise and 40% specific to a business group.

3. End to End Business Process Design
Each business process will be looked at from "source' to "source". For example, end customer self service is integrated into the process so information is delivered, processed at source of creation.

4. Business Process Design Drives the IT&T Strategy
The cross functional business processes designed for the future business drives the development of the IT&T architecture. The IT&T architecture includes: user access, applications, information/data, infrastructure and telecommunications.

5. 80/20 Rule
Deliver solutions that will meet 80% of the business process needs. While we seek a very high quality of solution, we know that customer need, time and dollars must be met.

6. Design for "Tool Time"
Most business processes have a "transactional" nature to them. Most of the transactional processing can be enabled by technology. This will free up our team to spend time on getting the job done and on knowledge-based work.

7. Single Source of Information
Incorporate single source of "truthful" information. We may replicate that data in order to be to meet business process needs but will stand behind a single truth.

8. Test & Validate Current IT&T Investments
Test and validate the current IT&T investments first to solve the business process needs. In the event that the current IT&T architecture cannot deliver to the business needs in an effective and efficient way, we will look to buy/obtain proven technologies. We will leverage "bleeding edge" technology only in an applied R&D environment.

9. Short and Long Term Strategic investments
In order to keep operating and improving the business it is necessary to implement incremental improvements. These would be considered short term improvements that would be implemented and have paybacks attained in 1-3 years. They may be replaced by the longer term strategies in the 3+ year's time frame.

10. Consistent and Effective Governance
Overall governance of the IT&T investment ensures we utilize the resources in the most effective manner for the overall organization. Having a governance structure to set priorities, oversee the allocation of resources, address the interdependencies of the project work and provide oversight to the operations provides a foundation for success.

BC Hydro Business Strategy

The future state for our customers and our operations is defined by the business strategy. From this strategy, we define our business process strategy. The process strategy is driven from end to end, cross business group processes that affect customers, assets and our people. The processes reflect a consistency and efficiency where needed and a specific tailoring for uniqueness. As a method of developing industry leading and a common framework for the business groups we have settled on Accenture's High Performance Utility Model (HPUM). A graphical view of this model is attached to this document.

See the supporting notes for a description of the High Performance Utility Model (HPUM).

Business and Technology Architecture

The remainder of this section describes what components are required to enable the business goals and objectives for Hydro are met efficiently and effectively and reflect improvements, innovation, best practices, and benefits to our customers and the business.

The components are reflected in the diagram below and described following the diagram:

- Business process architecture – the design of how business processes work in the organization and how they can have common attributes across the company
- User interface architecture – the design of how people interact with the systems. Creating effective screen designs and navigation are key to end users effectively using the systems
- Security architecture – the design of how security are built into the access and use of the systems and ensuring they are consistent and effective
- Functional applications architecture – the design of the applications to ensure they deliver the functions required for the business processes
- Information / data architecture – the design of the databases to ensure single truths, effective access and integrity of the information
- Common applications architecture – the design of the applications that support the business underneath the functional applications (e.g. email and document management)
- Infrastructure architecture – the design of the desktops and data center equipment to deliver the performance and availability of the layers above the infrastructure
- Telecommunications architecture – the design of an integrated network of wireless and fixed networks to effectively provide the services to the end users
- Business continuity architecture – the design of the facilities to accommodate the technology and provide back up and recovery services for business continuity

Business Process Architecture

The driving priority for IT&T is to enable the business to ensure it meets its goals and objectives. The primary focus is on the future business processes. Each process addresses enterprise and/or business group needs. For example, a work process affects many parts of the organization and if designed well can facilitate one piece of work to the next with the end-to-end results in mind. Automating transactions like this can simplify the processes while maximizing the data integrity. Business processes are defined in levels. Typically there are five levels. The first two levels can define the commonality across the organization while the lower levels typically are tailored to business users. The level one processes include:

1. Customer processes
2. Operations processes
3. Asset processes
4. Goods & services processes
5. Energy processes
6. People processes
7. Corporate processes

It should be noted that we have not identified a separate process for EHS (environment, health and safety).

These processes are imbedded in each of the above processes and by doing so; the "safety by design" objectives will be met.

The process map following reflects the level one processes on the far left, the level 2 process in the next column. Next is the percentage breakdown for the enterprise wide use versus the individual business group and which business groups use the process.

When developing our solutions for the future, levels 3 to-5 of the process map will define the enterprise solutions along with the specific needs for individual business groups.

User Interface Architecture

Developing the interface between the user and the systems he/she needs to perform their functions is a critical component. Maximizing the effectiveness will translate into solutions working best for the user. Common navigation, common design and personalization are key attributes. For example, a common way to navigate the variety of screens used in our systems would greatly enhance the use of those systems.

The systems need to be easier to use, common in their framework, provide a unified view of related business processes and be more intuitive. To do this requires developing a better interface to the systems on all the projects and to capture the One Hydro aspect. Tools utilizing friendlier user interfaces with tools like Web 2.0 and service oriented architectures will be implemented. These tools currently exist and will be rolled out as part of project implementations.

Security Architecture

BC Hydro needs a very high degree of security in the systems and data being accessed. The security architecture must address this requirement. It provides not only access requirements but needs to provide preventative and detective aspects to the solutions.

Security solutions have been implemented locally as applications have been rolled out. While the security risk is low today, trends in web-based applications and mobile workforce requirements indicate that a more integrated security view is needed. There is more risk to our systems evolving and we open ourselves up to more security issues. Security will be viewed as an integral part of the architecture rather than a local retrofit. A security architecture plan is underway and we will begin rolling out a more integrated security structure in April 2009.

Functional Application Architecture

This is the most complex and difficult architecture to define. It directly addresses the business enablement and cost effectiveness for IT&T. These solutions are guided by the business strategies currently being developed and the cross functional process framework.

As part of the strategies being developed, they are defining the application foundations required to meet the future state. There has been a significant investment in software including many enterprise solutions (ERP's) and hundreds of unique applications. The solution going forward needs a single foundation. We analyzed two foundations:

1. ERP foundational option: the majority of the solution requirements would be met by a single ERP solution set. Our ERP foundation would be met by SAP. SAP provides the best platform for the cross functional business process design we anticipate and have been leaders in the development of best practice in the utility industry. Most leading utilities use the SAP platform and because of the depth of the automated workflows have attained their business benefits.
2. Best of breed: the majority of the solution requirements would be met by a combination of best software components. This would be met by SAP for customer solutions, Passport for operational solutions and

Peoplesoft for HR and financial solutions. Similar to what we have today except that fewer unique applications would exist and more custom integration would be required.

The key criteria for evaluation and recommendation included:

- Functional capabilities to deliver transformational business processes
- Automation of as much transactional processes as possible
- Single source of truth information – data integration
- Simplified processes –integration and cross functional as possible
- Efficient and effective sustainability
- Total cost of ownership

Based on the analysis with the business groups and the CIO, we are recommending a move towards the SAP ERP environment. We recognize we must implement this in an **incremental** manner and allow the current initiatives the ability to achieve their business benefits and objectives.

The key direction is to establish a foundational solution to address the majority of the business processes and to integrate that into an enterprise view. That said there will continue to be a need for specific applications such as Power On, Trading, DMS, etc. As discussed later, these specialized applications will be integrated into the architecture where needed. The following section describes the status of these components:

Customer Applications: Currently SAP is the customer application and will continue to be built upon for future enhancements.

Operations Applications: Currently this is a blend of Passport – providing work management solutions and Peoplesoft – providing the financial aspects of operations. For the next 2-3 years Passport should be viewed as the key solution for work management for Field Operations. We recommend that SAP be adopted as the long term strategy but may include some earlier development work in EARG.

Asset Applications: Currently part of Passport/Peoplesoft. This application has been reviewed along with the operational and financial applications. A single asset registry will better support a One Hydro operation. An asset management process design will be part of the EARG strategy (they are the key owner of an asset solution as they have the most complex and breadth of assets to manage) and we recommend the SAP environment.

Goods / Services Applications: Currently the project P2P is being implemented. It had assumed a Passport/Peoplesoft solution and did not look at alternatives. Initial investigation shows that SAP may provide a better long term view when taken in the context of an overall One Hydro financial process. Benefits anticipated in the business case need to be attained. These can mostly be achieved by implementing the planned process changes along with a reduced application change in Passport/Peoplesoft. We would conduct the development in the current versions of Peoplesoft and Passport as the P2P leadership team confirms that most benefits will be achieved without the additional risk of a new system. That would provide the opportunity to migrate to a more robust SAP platform in 2-3 years.

Energy Applications: These typically are specialty applications enabling specific business processes (trading, forecasting, water management, OMS, demand management, etc.) and will continue to be "bolt on" best practice solutions. They do require varying degrees of integration. Part of the strategy is to harmonize the integration via SOA (service oriented architecture) and an ESB (enterprise service bus) to provide flexibility and cushioning for changes in technology and processes.

SOA and ESB solutions provide standard technical bridges between databases so we can access data, from a single source, without modifying applications. These architectures have proven to reduce some of the complexity of integration while you migrate and incrementally build new applications.

People Applications: Current and planned business processes for HR are supported by the Peoplesoft applications. These will be treated as a "bolt on" best of practice application suite. This could be delivered

through Peoplesoft or SAP. Most of these functions are being reviewed as part of the HR strategy underway. We recommend SAP provide the business process solutions for HR and payroll. Part of the strategy includes investigating outsource options and that may affect the recommendation.

Financial Applications: The financial functionality and the current Peoplesoft functionality are being reviewed along with the P2P and financial management. We recommend the SAP environment be established as the long term solution for financial management, reporting and control. SAP would provide a better long term, One Hydro view in a more cost effective way.

Currently a financial operation strategy is underway. It will address a One Hydro view and the need to implement a solution for IFRS (international financial reporting systems) and other financial process requirements. The industry leading solution for the utility sector is the SAP application suite. The business has confirmed its financial strategy and recommends we use the SAP environment.

The incremental roll out of the SAP environment will also involve the interim architectures along the way. As well, we will continue to utilize "bolt on" specialty applications. As mentioned previously, the solution development and integration will be supported by the use of ESB and SOA architecture design.

We will still retain unique applications and still have the underpinning from the geographical information system (GIS) but they will be more seamless and less complex to the end users through the EAI and SOA is a requirement for specific functions required to meet specific business functions. We will need to review the GIS solutions over the next year and as SMI and field operations roll out to determine whether there is a need to change this environment.

Common Applications Architecture

The common applications are solutions required to meet the day to day management operations of BCHydro. Providing tools in a collaborative way will improve communications and provide a common way to access information.

This architecture supports the business and the applications, through software and platforms. This includes business communications, collaboration, workflow, and document management areas. Our current solution set for communications and collaboration are Microsoft-based and will continue to be so. We are currently planning an increased use of these tools to increase productivity and effectiveness. These include:

- Microsoft office suite
- Sharepoint – collaboration environment
- Filenet – document management

Finally, we have implemented the Cognos software to provide business reporting, score carding and data warehousing for financial and operational business needs. We do not plan to review this direction in the next 2-3 years.

Information/Data Architecture

The organization of data is critically important to the use and effectiveness of the business processes. Data modelled to deliver a "single truth" and designed to be readily accessible requires a well designed architecture. Generally, the data required to support the business processes are grouped as follows:

- Customer
- People
- Work
- Asset
- Property

- Supply chain
- Financial

Data can be highly structured (e.g. financial databases) or highly unstructured (e.g. Email files) and exist in all electronic and physical forms. Much of the information exists in the organization but needs to be consolidated and improved upon. Recently we have implemented a data/information retention policy to support the architecture and its use of data stores to ensure data integrity, "single truths" and data availability is provided to the users.

A key foundation is to provide information to the business in a highly integrated, single source environment with a high degree of data quality. While much of the creation of data is through the applications, the foundation is through the databases and platforms. Today, we have many databases with multiple locations for the same data. It is difficult to determine what data to use, what is the most accurate and how we can report information. All future implementations will be driven to a single source of truth and may be better facilitated through more integrated application set. As we develop a more integrated environment with SAP, the data models we use will become more consolidated. We are currently utilizing Oracle and Smallworld (GIS) for our data foundations. This will continue.

As we mentioned, we are developing an integration architecture based on a service-oriented architecture (SOA). The purpose is to increase the efficiency of integrating applications and providing a stronger platform for users. We plan to use an existing software suite of Websphere.

Infrastructure Architecture

Underneath the applications and data architectures is the infrastructure required to support the business. There are key attributes the infrastructure has to have. These are known as non-functional requirements and include:

- Availability
- Accessibility
- Performance
- Scalability
- Adaptability
- Integrity
- Recovery and back up

These requirements are delivered through the infrastructure and telecommunications environments. For infrastructure, components include:

- Wireless devices & associated software (non-functional)
- Desktops & associated software
- Servers & associated operating systems
- Security software
- Development software
- Operations software

Today we do not have a purpose statement on when and why we utilize these devices in support of our business. We currently are developing a strategy to define the use of pc's, laptops, PDA's, servers and storage devices. We will begin implementation of these architecture strategies in April 2008.

We currently have built and are operating a disaster recovery and back up facility in Calgary. The build is complete with equipment installed. We can provide disaster and back up services and are currently migrating the applications and databases. Approximately 10% of the applications have been migrated and this will continue over the next two years.

Telecommunications Architecture

The future directions for telecommunications at BC Hydro are going to be extended networks to support our business, IP-based (internet protocol), wireless and high bandwidth for advanced applications. Our current telecom infrastructure will not meet that need.

We are currently selecting a supplier for the SMI/smart grid needs that will be the foundation for BC Hydro's needs. Concurrently we are conducting a telecom strategy plan to address the management and operational needs for Hydro. It is anticipated these will be incorporated into the overall solution set. Implementation of the high bandwidth IP network will begin in 2009, as part of SMI.

WHO AND HOW

How the business process/IT solutions are implemented and sustained require key roles from three areas of the organization:

1. Governance / Executive
2. Business Groups
3. CIO (including ABS)

This section of the strategy document describes the key roles from each of the areas. We have defined in more detail, the CIO roles and would expect to work with the business to define more clearly the business group roles.

Governance / Executive

We have established a formal governance group that will oversee the business process and IT&T investment. This group is comprised of the Executive Team. The governance group provides oversight and direction on the investment, the priorities, change management and the One Hydro view into the business process/IT work. The work includes projects and operations. Each month the CIO will report to the ET on:

- Strategic initiatives
- Top 30 projects and the interdependencies
- Key operations and service delivery
- Business financials and resorting

Over the next few years as we transform much of our business to support our goals and objectives, there will be a significant amount of change across and within the business groups.

The lack of focus and management on how changes are implemented in the company is a key reason why the implementation of new processes is and systems are difficult and are not sustainable.

Overall the organization needs to provide change management direction and support for an integrated approach to change management. This can be done by the establishment of a Change Management Officer reporting into the overall governance group. We have described the change management needs for the individual business groups.

We are entering a period of significant business transformation and change at BC Hydro. While the majority of this strategy relates to business process/IT initiatives, there is a significant change management requirement as well. Both of these environments will require more time and attention from the overall organization as most of these transformations are at the enterprise level. Given that increase in change and IT we recommend the organization consider having the CIO / change management group report directly to the CEO. This will provide One Hydro oversight to the delivery and the focus and priority for the capital investment of these initiatives.

Business Groups

The business groups, through their Business Information Systems (BIS) team, are accountable for all aspects of business process and systems initiatives in their business group. This includes the strategy, the projects, the change management, and ongoing business liaison with their groups.

The ability to successfully implement and sustain the transformation work requires the business processes and systems to deliver the business benefits. Equally important, the businesses have to have the ability to implement and sustain the changes needed to people and processes. We recommend:

- Focus on supporting the operations – move BIS leads to operational leader
- Incorporate change management into role – full time resource
- Project managers working on projects in business group would report to operational leader
- Project technical resources assigned to these projects would work for the project until completion and then return to the resource management group that oversees resource allocation
- All current business process, training, ongoing support would remain with BIS group. Note: this may include repatriating business analysts back from ABS
- Move corporate BIS group to business group as it is currently part of the CIO organization and should be more closely aligned to the corporate business functional areas with a single business representative.

The CIO's role is to advise, support and ensure quality and standards in areas of:

- Overall business process design (One Hydro and business group)
- Overall technical architecture
- Project management (PMO)
- Resource management
- Operational management

CIO

The CIO organization has the responsibility to ensure the business process and technology is available to enable the business groups of BC Hydro and the overall enterprise achieves its goals. The role therefore is one of establishing, advising and overseeing the successful implementation and sustainment of the process and technology architectures needed for the business.

Also, BC Hydro, through the business needs and the recommended move towards the single overall architecture recommended earlier, the CIO needs to be very focussed on overall architecture in support of the business initiatives.

To do this effectively, we have realigned the CIO organization to effectively carry out these roles. Below we have reflected an organization realignment to show:

- What needs to be delivered and sustained (i.e. the business process and technical architectures.
- How we deliver the solutions (i.e. how we oversee projects, service (operations) delivery and running the business of IT&T)

Following the organization chart, we have defined the key roles of each area.

The key organizational units are described from two perspectives. First the left four columns reflect "what needs to be built, i.e. the business processes and architectures. The three right columns reflect how we deliver the solutions, i.e. the management of the project portfolios, the service delivery of the day to day operations and the managing of the business in terms of resources, assets and financial.

Business and Architecture Roles:

Business Group relationship

The BIS managers, as previously mentioned, should report directly into the business leads. There is a dotted line suggested to the CIO organization through both the Process Architect and the CIO. We currently do this through regularly structured meetings although the focus will shift more to the business process aspects as the business group move towards more process changes as described earlier.

Process Architects

The role of process architect is to ensure the cross functional processes are designed, built, implemented and sustained in BC Hydro. Each architect would be a team member who is knowledgeable in the business. The role would come from the business and likely be a rotational position. The individual may retain their regular function most of the time but is able to provide direct oversight to business analyst and process engineers as we design the new processes within the projects. They would be expected to sign off on process design. Key roles are:

- Establish business process architecture design, standards and quality assurance
- Utilizes industry best practices and future directions
- Review architecture and design implementations to ensure enterprise consistency
- Participates in the business units business operations/IT strategy and planning
- Provides input to the investment and budgeting process

Security Architect

As we move more towards the self service processes and convergence of technology through advanced application and telecommunications, the need for an integrated security approach is fundamental. An example of this is the implementation of security cameras at generation sites. The systems are now internal protocol (IP) based devices that are an extension of the corporate network and an extension of the security applications used to access our systems. We are designing and implementing end-to-end security solutions today under a single architect.

Also, the security standards and requirement for the utility industry are onerous and constantly adapting to the world conditions and the architect is responsible for assisting in the development and implementation of those standards.

To provide oversight and a holistic approach to security we have established a security governance group consisting of representation from security (Ray Stewart's group, CIO, CRO and each key business group)

The business process and security architects are highlighted given their significant role in the organization. The remaining architecture roles fall under a Chief architect.

Chief IT Architect

The recommendations regarding the architectures previously described were developed by the Chief Architect, business and technical team architects. This role is to develop the overall technology architecture roadmap: enterprise and specific lines of business. Key responsibilities include:

- Establish IT&T architecture design, standards and quality assurance
- Utilizes industry best practices and future directions, informs the ET quarterly
- Review architecture and design implementations to ensure enterprise consistency
- Participates in the business units IT strategy and planning
- Provides input to the technology investment and budgeting process

There are five areas of architecture requiring focus and accountability. These five areas require an architect to oversee the work but utilize the working teams from the business, CIO and ABS. They consist of:

- user interface
- applications
- information/data
- infrastructure
- telecommunications

Each working team member has a dual responsibility: overall leadership of their discipline and a role on the projects or sustainment. They continue to work for their appropriate organization and fulfill the role of lead

architect in ensuring BC Hydro develops solutions that meet the needs of the company and the business groups.

These are reflected in the organization realignment below.

User Interface Architecture Lead and Team

The key role of the user interface architect is to ensure the people/ machine interface is the most effective and consist it can be. Common access, common navigation, customize to individual roles and ease of use are fundamental to acceptance and sustainability of the solutions. This role is currently being implemented and shared with the digital communications team. It is addressing not only the applications being implemented but includes the internet/intranet characteristics.

Application Architecture Lead and Team

The role of this group is to enable through the applications, the defined business processes required to support the business. This includes the One Hydro integrated solution along with the specific applications needed to support the unique business processes. The architect and team have been established and are responsible for the recommendations to move towards the integrated environment. A second component of the application architecture includes the common platforms including office and document management and the integration solutions.

Information / Data Architecture Lead and Team

Fundamental to the effective and efficient operations of the business is the data architecture and access design. Single truths of specific information, data integrity, data access and the ability to report information is the key role of this group. Our current data architecture cannot support the business well and will be rearranged under the

direction of the data architect.

Infrastructure Architecture Lead and Team

The role of this group is to ensure the hardware and related operating systems platforms can support the applications. Specifically they are responsible to ensure the capacity, performance, reliability, availability, scalability and integrity is well designed into the architecture. These platforms include the desktops, laptops, peripherals and servers in the overall architecture.

Telecommunications Architecture Lead and Team

The final group of architects includes telecommunications. The role of this group is of particular importance today as the types of networks converge from traditional voice, data and wireless into common telecommunications architecture. As well, the business process requirements are pushing the limits of the network well beyond the borders or our business and the telecommunications solutions are needed to support that movement. The scope of the architecture includes all forms of voice, data, internet, video, microwave, radio and wireless technologies. The telecommunications architect therefore has a broader scope than ever before.

The detailed telecommunications architecture is being driven by the business needs of SMI. The architect is playing a lead role in this initiative.

Now that the "what needs to be done" roles have been defined, we will describe the "how" or delivery roles needed to ensure an effective delivery for the projects, operations and the business is established.

DELIVERY ROLES

There are two areas with the delivery organization that have specific and accountable roles: Portfolio (which includes project management) and service delivery or operations

Portfolio Manager and team

Critical to having successful delivery of business process and IT solutions to enable the business is to have a clear structure and focus on the key aspect of project delivery. It includes understanding and managing a portfolio of initiatives under the overall BC Hydro corporate strategy and planning. Ensuring the right things are being done, by the right people and the right time are critical to ensuring what gets started gets finished on time, on budget.

The portfolio managers role is to oversee the priorities of the business projects and ensure they are being delivered consistently, effectively and meeting the business targets. There are four key roles under the Portfolio manager:

- Project management office (PMO)
- Standards and lifecycles
- Quality assurance
- Development environment

Project management office (PMO)

Over the past few months the PMO has developed the key metrics that are needed to oversee and manage the projects. While these are focussed on business process/IT projects, they are appropriate for other project at BC Hydro. The Chief Strategist is taking the material used and applying it the overall initiatives. The metrics are

being reported now up to the governance group but are a mix of anecdotal and objective measures. Over time we will evolve to an objective only base metrics.

As well, over the past few months we have worked with the business to prioritize the projects in the company and established the "Top 30" initiatives to oversee. This accounts for the majority of initiatives that have the greatest impact on the business. The score card below reflects the current projects and the metrics being tracked.

The CIO's PMO has the role and responsibility to oversee, manage and maintain this portfolio. The projects are run at the business level and supported by this group.

Service Delivery Manager and Team

Service delivery includes all aspects of delivering the day to day services to users of Hydro's systems. This includes applications, infrastructure and telecommunications. Each one will be described but there are some key principles that have been established and will be incorporated into each of the service delivery organizations. They include:

- PARC (preventative, additive, reactive and corrective) services:

1. Preventative: people and processes working on preventing outages, problems and errors from occurring. Typically this includes detection, research and analysis functions in software, hardware and networks.
2. Additive: people and processes working on smaller improvements to the software, hardware and networks.
3. Reactive: people and processes working on an outage, problem or error that has occurred and need to be fixed immediately to allow the business to continue.
4. Corrective; people and process working on documented and planned change that to correct an outage, problem or error.

- Service catalogues: To better service the user community and to work with ABS with a more service delivery model we have categorized the services as reflected below:

Within each of these areas of service, we will develop service catalogues that will allow the organization to better manage the IT&T services. The focus will be on quality of service and not on contract components as it currently done. A joint planning session with ABS is scheduled for April to define these functions.

The Service Delivery Director has the overall responsibility to ensure all services are being delivered with the highest quality standards and most efficient use of all delivery resources. To ensure an end-to-end service is delivered to the end users, an overall accountability is needed. If the systems are not meeting end user requirements, it is the responsibility of the service delivery group to ensure the applications, databases, infrastructure, and telecommunications are working in an integrated manner. Three key roles are:

- Applications service delivery lead and team
- Infrastructure delivery lead and team
- Telecommunications lead and team

Applications lead

The role of this lead is to organize all resources providing applications development and sustainment under one team. The lead oversees how resources are utilized, the quality of the services and the management of the application suite. For example, all software related to work management or financial processes is being delivered under the application lead. This includes activities from the preparation of the statement of work through to how the application is maintained once it is in production. These services are delivered by ABS AS and AM resources, business group resources and consultants and would be managed as a single group.

Infrastructure lead

The role of this lead is to organize all resources providing infrastructure under one team to deliver the operational service to the business groups. It includes delivery groups within the CIO and ABS ID delivery groups. This includes the operation of the data centers.

Telecommunications lead

The role of this lead is to organize all resources providing telecommunications under one team to deliver operational services to the business groups. This area requires the most significant changes as the current environment has this scattered across many business units and effective and efficient service is not being delivered. The recommendation is to consolidate this group under the CIO. Some of the services would be delivered by BC Hydro team members while some would be deliver by ABS. All services would be managed by a single manager. There areas of responsibility would in radio/wireless, business/data and voice/IP.

Business Management Lead and Team

As in any IT&T organization, it is important to provide supporting business services to the company. Managing the key resources allows the CIO and BC Hydro to know it is effectively delivering IT&T solutions. Three areas of this group are:

- Manage the assets (all software, infrastructure and telecommunications assets)
- Manage the people (all people involved in the delivery of business process/IT systems
- Manage the finances and contracts

Asset lead

The key role of this lead is to ensure the assets are being acquired, maintained and disposed of in the most effective way. We manage over $130m worth of assets today. The lead has a key role in asset registry work within BC Hydro.

People Resource lead

The key role of this lead to ensure we have the right people on the right projects at the right time. This requires working with the business groups to ensure the priorities and estimates have been established and the resources assigned to the work. IT includes all resources, contract, staff or ABS. We have implemented a rolling 12 month plan with the business as a tool to track resource utilization. IT also includes ensuring we are maximizing our contractual commitments with ABS.

Finance and Contract lead

The key role of this lead is to ensure we are tracking to plan and that we have contracts in place to provide the best investment for BC Hydro. This includes the establishment of a plan for all IT&T expenditures, tracking commitments made and analyzing the variances to affect change. It also includes responsible for establishing best contract practices and negotiating terms and conditions for the key 20-30 IT&T contracts.

Role of ABS

A number of the initiatives will have an impact on the skills, abilities and services of the ABS group. They may also have an impact on the outsourcing arrangement. It is anticipated most of the project work to deliver the transformational solutions will be competitively bid. Most of this work will be performed as the current ABS contract enters the last few years. We may not include the sustainment as part of the AMSA agreement. We would look at the successful implementer as a possible candidate for support until the outsourcing direction is decided.

Currently we are planning to begin the "what to do next "phase of the outsourcing in January 2009. It is necessary to begin the process then as the outcomes (in source, extend or competitive process) could require up to four years. The steps include:

- Conduct analysis of the IT outsourcing plan (in concert with the overall ABS agreement)
- Conduct analysis of alternatives (in source, competitive process, extension)
- If in source- planning for transition to BC Hydro
- If competitive – planning for the RFP /selection / contract / conversion process
- If extend – planning for new contract negotiation
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WHEN

The strategy process has been under development since September 2007. To ensure the strategy is delivering to the business and not leading the business, a number of business strategies had to be completed before we could begin analyzing alternatives, particularly the application environment. We also wanted to ensure we had a clear definition of the One Hydro business needs to meet the goal of the overall business. After that, we have completed the initial review and made the recommendations in the previous sections.

This section describes the next steps in the deployment of the strategy upon governance approval of the strategy. The focus is on the overlay of an ERP incremental roll out under the context of the current initiatives and the interdependency of those initiatives.

We have begun a number of aspects of the strategy as it made good business sense to implement. The remainder of the section describes actions implemented, underway and planned.

A number of the key aspects of the strategy have already been implemented. These include:

- Objectives of the CIO
- Key principles
- Completion of the field operations business / IT strategy
- Completion of the customer business strategy
- Cross functional process map framework
- Governance group
- Top 30 projects oversight
- Rolling 12 month resource planning
- CIO architecture group established

A number of aspects of the strategy are part of the current capital plan and are continuing to be implemented. These include:

- P2P initiative- currently implementing the short term strategy to achieve business benefits and meet the audit requirements.
- SMI business and technology initiative – currently in the vendor selection phase.
- Telecommunications strategy – currently part of the SMI initiative.

A number of other key aspects of the strategy are underway. These include:

- EARG business operations strategy
- Financial business operations strategy
- Enterprise project management strategy
- Security strategy
- Infrastructure strategy

Finally a number of other parts of the strategy will be implemented upon approval of the plan. These include:

- Safety business strategy
- HR business strategy
- Business change management organization realignment. There a number of activities to carry out including business process owners, change management, BIS realignment, CIO reporting and we will work with the ET and HR to develop these plans once they have been further analyzed and agreed to by the executive.
- CIO organization realignment and the Impact on ABS
- Application roll out

The remainder of this section will describe the application roll out as it is the most important aspect and has the most impact on the organization and current initiatives.

We have analyzed the current initiatives and understand the impacts on the organization. We are recommending an incremental build out of this solution so we can provide the most benefit with the least impact. We have as well looked at the priorities and capacity for delivery and sustainment.

A key requirement is to provide dedicated resources, in a priority sequence to deliver the solutions over the next 3-4 years. That will also include stopping some current initiatives so we can reallocate and focus the right people on the right things. We have assumed the new roles as defined earlier will be incorporated into the plans.

Key considerations in planning out the incremental build towards the integrated environment include"

- Do ability – design the plan to ensure the projects are doable
- Focus on key projects
- Resource constraints have been minimized
- Short term pain will yield long term gains
- Best interests of the overall organization
- Business groups achieve most of their benefits from process change and short term solutions

The charts below summarize the projects, their key phases, the timing of the deliveries and the conversion from interim implementations (shown in black) to the SAP environment (shown in red). We have also shown a resource impact chart to reflect which roles in the business groups will be affected the most.

Abbreviations:

BP – business process phase, SD – solution design, BT – build/test, CI – change/implementation, S- 90 day support, O-operational

Along with the interdependencies, we have identified, at a high level, the impact on the people of the organization. Recognizing that it is the end users and key knowledge workers that are the critical component to all the work being done, we wanted to see the impact of the initiatives. The chart below reflects our initial review. Note that we attempted to summarize the people by key skill/work areas and not by organization or job

descriptions.

L-low, m-medium, h-high involvement

WHAT ARE THE FINANCIAL IMPLICATIONS

This section includes a summary of the impacts on the IT&T capital and operating budgets as related to the changes. Please note we are still finalizing these costs.

Capital

The capital costs are related to the application development and infrastructure upgrades contained in the current capital plan and any incremental considerations. We recognize each initiative would stand on it own with the development and approval of a business case.

Our current planned capital expenditures related to the equivalent current Passport and Peoplesoft initiatives over the next 3 years are estimated at:

P2P - $31m
Financial systems, reporting systems, work management systems - $32m - $36m
Infrastructure to support Passport and Peoplesoft - $6m
Total $68m - $72m.

Our total capital plan is approximately $126m over the three years.

Note there are business cases being developed for enterprise project management, financial, HR/payroll safety, EARG and Field operations that are not included in the above number. These would be incremental and stand on their own business case.

To roll out SAP incrementally would require BC Hydro would still invest in interim solutions of approximately $25m over the three year period. These solutions are being implemented to achieve short term business benefits and more than half these costs are allocated to P2P.

Over the next three years the SAP investment is broken down into a financial systems phase of an estimated $25m - 30m followed by a replacement of the work management and supply chain systems of $50m -$60m

Total cost of the SAP rollout, including interim solutions is estimated at $100m - $110m over the three years. *Note this includes a number of functional areas not included in the current plans - HR., payroll, project management, large scale change to work management, and financial systems. We have not attempted to remove these costs as we believe they are important to the business.*

The net difference between the current plan to the recommended approach is $32m to $38m higher. It is suggested to include some of the unplanned initiatives in order to compare accurately. Also, through further analysis we would likely reduce or eliminate other capital projects in order to focus on the priorities and also to work within the existing capital plans.

This analysis is currently being done.

Operating

This is comprised of the individual business groups and CIO costs to development, sustainment and maintain the

applications and the infrastructure. We have not included telecommunications and desktops as there would be minimal changes. Our initial analysis concludes that we could realize a reduction of $6-8m per year in these costs. It is primarily due to reduced integration support costs and reductions in server operating costs. We are still verifying these costs.

Benefits to Business

We have not quantified the benefits to each business groups in the implementation of the business solutions. We anticipate the same or better benefits as defined in their business cases. The CIO costs will decrease by $6-8m per year after implementation. We expect to do this during the individual initiatives business cases.

There is significant effort by people and resources across the company in preparing, analyzing, matching and reporting information. We know there are hundreds of people preparing spreadsheets and processing data that will be streamlined. We also know that these same people spend hundreds of hours per year reconciling or re-formatting information to meet financial and operational requirements. Much of this work will be simplified by integrated systems and better data architecture that are planned in the recommendations.

Implementing an integrated process and systems environment can provide an opportunity for 80/20 rule to be applied to business process change. Instead of focussing on implementing what processes and systems that exist today we would use the SAP solution to guide our transformation.

SUPPORTING NOTES

1. HPUM – High Performance Utility Model

2. Descriptions of Technical Architect Roles
1.

Appendix 1a.

DESCRIPTION OF KEY ARCHITECTURE ROLES UNDER CHIEF ARCHITECT

User Interface Architecture Lead and Team

The key role of the user interface architect is to ensure the people/ machine interface is the most effective and consist it can be. Common access, common navigation, customize to individual roles and ease of use are fundamental to acceptance and sustainability of the solutions. This role is currently being implemented and shared with the digital communications team. It is addressing not only the applications being implemented but includes the internet/intranet characteristics. Key roles are:

- Develop the overall user interface architecture roadmap: enterprise and specific lines of business

- Sets the user interface standards and quality assurance
- Provides input to the technology investment and budgeting process
- Oversees the user interface architecture team (made up of business group representatives)

Application Architecture Lead and Team

The role of this group is to enable through the applications, the defined business processes required to support the business. This includes the One Hydro integrated solution along with the specific applications needed to support the unique business processes.

The architect and team have been established and are responsible for the recommendations to move towards the integrated environment. The key roles are:

- Develop the overall application architecture roadmap: enterprise and specific lines of business
- Sets the application architecture standards and quality assurance
- Ensures the quality of the applications development and test environments
- Provides input to the technology investment and budgeting process
- Oversees the application architecture team (made up of business group representatives)

A second component of the application architecture includes the common platforms. These are:

- Office solutions
- Collaboration and content management
- Document management
- Service Oriented Architecture (SOA) and Enterprise Service Bus (ESB)
- Enterprise Application Interface (EAI)
- Development standard software / reusable code libraries
- Business intelligence/score carding/reporting

The architect and team are also responsible for these areas of the architecture.

Information / Data Architecture Lead and Team

Fundamental to the effective and efficient operations of the business is the data architecture and access design. Single truths of specific information, data integrity, data access and the ability to report information is the key role of this group. Our current data architecture cannot support the business well and will be rearranged under the direction of the data architect. Key roles include:

- Implement an overall information/data architecture roadmap: enterprise and specific lines of business
- Sets the information/data architecture standards, quality assurance
- Oversees information and data retention policies
- Participates with the business units in IT strategy, planning and budgeting
- Utilizes industry best practices
- Understands the business information needs that would be enabled by the technology
- Provides input to the technology investment and budgeting process
- Oversees the overall information/data architecture team (made up of business group representatives)

Infrastructure Architecture Lead and Team

The role of this group is to ensure the hardware and related operating systems platforms can support the applications. Specifically they are responsible to ensure the capacity, performance, reliability, availability, scalability and integrity is well designed into the architecture. These platforms include the desktops, laptops, peripherals and servers in the overall architecture. Key roles include:

- Develop the overall infrastructure architecture roadmap: enterprise and specific lines of business
- Sets the architecture standards and quality assurance
- Conducts infrastructure architecture quality assurance
- Ensures the quality of the development and test environments
- Participates with the business units in IT strategy, planning and budgeting
- Utilizes industry best practices for components, outsourcing, hosting and general management of the infrastructure
- Provides input to the technology investment and budgeting process
- Oversees the overall infrastructure architecture team (CIO and ABS)

Telecommunications Architecture Lead and Team

The final group of architects includes telecommunications. The role of this group is of particular importance today as the types of networks converge from traditional voice, data and wireless into common telecommunications architecture. As well, the business process requirements are pushing the limits of the network well beyond the borders or our business and the telecommunications solutions are needed to support that movement.

The scope of the architecture includes all forms of voice, data, internet, video, microwave, radio and wireless technologies. The telecommunications architect therefore has a broader scope than ever before. Areas for architecture design include:

- Sites: campuses, sites, offices, groups, suppliers, customers
- Landscapes: WAN's, mesh, wiimax, LAN's, wireless, IP
- Transports and Networks: microwave, radio, satellite, fibre, cellular, switches
- Devices to connect: PDA's, handhelds, PC's, radio, cell phones, videoconference equipment, voice equipment

The detailed architecture is being driven by the business needs of SMI. The architect is playing a lead role I in that initiative.

Key roles include:

- Develop the overall telecommunications architecture roadmap: enterprise and specific lines of business
- Sets the telecommunications architecture standards and quality assurance.
- Reviews telecommunications architecture and design on projects to ensure performance, integrity, security and reliability targets are met
- Participates with the business units in IT strategy, planning and budgeting
- Understands the telecommunications regulatory environment
- Utilizes industry best practices for components, outsourcing, hosting and general management of the telecommunications infrastructure
- Participates in industry associations, working groups or research
- Provides input to the technology investment and budgeting process
- Oversees the overall telecommunications architecture team (CIO, ABS, Telus, carriers and business group representatives)

BC HYDRO OCIO STRATEGY FOR THE FUTURE
WORKING PAPER

BCHYDRO Confidential Page 1 4/21/2008

Field Operations business and technology strategy

Customer business and technology strategy

FUTURE

OPERATING

WORLD

SMI (Smart Metering Initiative) business and technology strategy

IT&T strategy

CURRENT

OPERATING

WORLD

EARG business and technology strategy

BUSINESS CONTINUITY ARCHITECTURE

TELECOMMUNICATION ARCHITECTURE

INFRASTRUCTURE ARCHITECTURE

USER INTERFACE ARCHITECTURE

COMMON APPLICATIONS ARCHITECTURE

INFORMATION/ DATA ARCHITECTURE

FUNCTIONAL APPLICATIONS ARCHITECTURE

SECURITY ARCHITECTURE

BUSINESS PROCESS ARCHITECTURE

Day to day improvements

Security

DRP (disaster recovery), hot back up sites, off site storage

Telecommunications

Day to day operations

Second level technical support

First level customer service

Infrastructure

Data

Applications

Financial process and technology strategy (P2P and financial processes)

SHE strategy

Corporate strategy
(HR, Corporate affairs, legal/regulatory)

Document Properties	
Title:	BC Hydro Mission
Author:	Don
Template:	Normal.dot
Last saved by:	dstucker
Revision number:	3
Application:	Microsoft Office Word
Total editing time:	00:01:00
Last printed:	2008/04/21 17:41:00
Created:	2008/04/21 17:41:00
Last saved:	2008/04/21 17:41:00
Company:	ABC

From: Reid, Charles <Charles.Reid@bchydro.com>
Sent: 04/28/2008 12:40:20 pm
To: Stuckert, Don <Don.Stuckert@bchydro.com>
Cc:
Bcc:
Subject: IT strategy

Hi Don, short note due to time constraints,

We did the board materials review with Bob this morning and in regards to IT, I have good news and bad news.

Bad news is that it is obvious that Bob is still uncomfortable with putting this forward as our 'final' IT strategy and would prefer we position it as an 'update'. We can discuss, I need to reword a few things to nuance this in the Exec summary, and not make some choices seem so final such as SAP and People soft 8 vs 9 and so on.

Good news is that we have agreement to have a 2 hours session with ET on May 12th to start the dialogue on the strategy. We can discuss process and so on. Also, as soon as the exec summary is blessed, Bob is ok sending out the IT strategy draft so that ET can digest to some degree at least, before the May 12th session.

Lots more to discuss when we have time,

Charles

From: Alexander, Traci <Traci.Alexander@bchydro.com>
Sent: 04/28/2008 04:55:16 pm
To: Stuckert, Don <Don.Stuckert@bchydro.com>
Cc: Lee, Meena <Meena.Lee@bchydro.com>
Bcc:
Subject: IT&T Board Executive Summary

THIS NOTE IS SENT ON BEHALF OF CHARGES REID:
Don:
As discussed, I have made the changes to your Summary.
[[...]]
Please take a look and let me know what you think by 10:30 a.m. tomorrow.
Thanks.

Traci Alexander
Office of the Executive Project Advisor
British Columbia Hydro & Power Authority
333 Dunsmuir Street
18th Floor
Vancouver, British Columbia
V6B 5R3
Telephone: (604) 623-4510
Fax: (604) 623-4155
E-Mail: traci.alexander@bchydro.com
HYDRECS Committee Member http://w3/hydrecs/

---

1 Attachment

EXECUTIVE SUMMARY

IT&T UPDATE ON STRATEGY DEVELOPMENT

PURPOSE

To provide an overview of a proposed strategy for IT&T architectures and operations / organizations. This is a summary of the initial directions and recommendations.

Background

BC Hydro has a clear mandate and strategy to be a leader in conservation and energy efficiency. We enable our customers to be energy conservationists while improving our generation and distribution facilities as part of the strategy. This is transforming our business and operations. Efficient and effective information technology and telecommunications (IT&T) systems and operations, will be a critical asset in assisting this change and transformation.

Within the BC Hydro strategy, the individual business groups are developing their strategies to meet their operational goals and objectives. These business group strategies set a direction for IT&T, to define a strategy that will focus on transformational systems and operations. The current IT&T systems and operations within Hydro will need to migrate to a stronger more robust environment, to enable the business groups to meet their objectives.

The current state of IT&T systems and operations has had mixed results in supporting the business. As we move to an enterprise state and the strategic use of IT&T, we require an overall strategy going forward, but it must be one that is incremental and provide increased value to the business.

Over the past few years, the deployment of IT&T was driven by the individual business units attempting to address their specific needs. While this did meet some of those needs, it caused a number of negative characteristics to develop, the most significant of which include:

1. Development of individual systems and more importantly, databases. We have over 600+ applications (not including the many spreadsheet applications in use) and 200+ databases supporting our business. Included in this mix is the use of four large ERP (enterprise resource planning) systems. This has resulted in a very difficult environment to support and sustain. It has also become difficult to find and report information for finance and operations without tremendous manual work and multiple sources of data.

2. Lack of priority setting for resources. While the IT&T resources are required across the organization, there is no overall priority setting to best utilize those resources. While in each area, it may have seemed reasonable, too much work and too few people were causing projects to start but not finish or finish without the desired results.

3. IT&T resources in the business, ABS and CIO. As a result of lack of confidence in delivery, lack of skilled resources, and focus on business group needs , the number of resources has

EXECUTIVE SUMMARY

expanded to over 540 ABS resources and 280 business unit resources (50 in CIO and does not include Powersmart). Shadow IT&T organizations have developed.

4. Quickly expanding infrastructure environment. To meet the needs of the business, the desktop and server environments have expanded to over 6500 desktops and over 900 servers. This is a complex and difficult environment to support and it is causing increasing overruns in operating costs.

5. No overall governance of the IT&T investment. Individual business groups manage their budgets and action plans. We had over 400 projects last year in the business with many projects late or unfinished. Without overall governance, it is difficult to plan and oversee what is best for the overall organization.

6. We spend in excess of $45m in capital investment on IT&T and another $72m in operating within the CIO. While the dollars are in line with other organizations, if we had our overall priorities better defined, we could achieve better results. These costs only reflect the CIO budget and do not include the individual expenditures in the business units for staff, project work, not through CIO, and some telecommunications costs (e.g. radio).

7. Implementing systems to support the business requires a focus on change management and sustainability. Many of the initiatives have had difficulty in reflecting the changes needed and the sustainment of those changes to meet the business benefits.

8. Telecommunications accountability and operations has been distributed across many business units. The result of has created a very difficult environment to support and maintain. With the advent of SMI and a need for an enterprise wide integrated network, it will be very difficult to deliver in the current structure and systems.

New Developments, Options and Recommendations

We embarked on developing the IT&T strategy with the business operations strategy, and current state knowledge in mind. The first key activity was to work with the business groups in the development of their operating plans and strategies. These strategies, along with the enterprise strategy, enabled IT&T to develop its plan. Key principles were established:

1. Overall governance group made up of the ET members, with regular progress reports to the board.

2. Cross-functional business process maps to enable common views of business process and systems to meet the One Hydro and business group needs.

3. Agreed principles for the enablement of IT&T solutions including end to end design, 80/20 rule, design for tool time, and a single source of truthful information

From these foundations, a strategy for IT&T architectures and operations/organizations was developed. Below we have summarized the directions and recommendations.

EXECUTIVE SUMMARY

IT&T ARCHITECTURE

AFTER the work we did with the businesses in developing their business operations strategy, we developed the architecture. These architectures define the framework to build our systems. They are integrated, secure, meet the business process needs, information needs and can be sustained in a very effective manner. The IT&T strategy has a number of system architecture components. There are two key components: Application/database and telecommunications.

Application/database architecture

A core platform, performing the majority of the work, to meet the business needs and to provide a more sustainable environment was developed.

We recognized that we had deployed four different non-optimal ERP solutions. A solution to this issue was analyzed and two options were considered:

- best of breed - taking the current ERP solutions and integrating the best components,
- a single ERP .

The analysis was based on cross-functional process needs, integrated databases for single source, and total cost of ownership. We also looked at what the industry is using and what was considered best practice. Clearly, SAP is the industry leader and there have been many successful deployments in utilities similar to BC Hydro (over 1100 electricity, gas, and water utilities in 70 countries run SAP). We are therefore considering the recommendation of deploying an SAP environment. We currently use SAP successfully in the customer side, and could INCREMENTALLY deploy it in the financial and operational business groups over a 3-5 year period.

Telecommunications architecture

The architecture to date addresses primary business systems and the transmission microwave network. The future state of telecommunications in BC Hydro will see the need for mission critical networks to support advanced applications such as the smart grid and smart meters.

The architecture design will meet the advance needs of the business and the smart grid, and is based on internet protocols (IP), wireless/radio integrated networks and large-scale fiber and microwave backbones.

OPERATIONS AND ORGANIZATIONS

To ensure we meet our goals and objectives, we need to re-align who and how we deliver the solutions to meet the business needs. There are five key areas:

1. Governance – a single governance group overseeing the key projects and operations. This change has been implemented.

EXECUTIVE SUMMARY

2. Roles of architects – use architects in business process and technology to ensure frameworks and quality are designed into the enterprise architecture. This has been implemented within the CIO organization.

3. Role of change managers – to provide an oversight to all the change that is to occur in the organization and is responsible for the overall organizational change.

4. Roles of business – In this role, the business systems groups must retain the business and change responsibilities to ensure the systems are delivered and sustainable. More focus on the business design, analysis, implementation, and less on the technical.

5. Roles of IT&T - to ensure project success and operational efficiencies for the overall organization. A project office monitoring the top 30 projects and a redefinition of the delivery services for ABS and other groups has been implemented. It is recommended to move the telecommunications groups under a single management structure in the CIO's office.

Next Steps

TIMING AND IMPLEMENTATION

The next area of strategy relates to the plans and timing of how we implement the strategy and the costs. First, the IT&T strategy is defined as part of the business priorities and plans. Second, we implement the strategy in an incremental manner to ensure the right people are dong the right things at the right time. Two key aspects are business project implementations, and organizational implementations.

1. Projects: We have developed a project interdependency chart that shows the overall plan to roll out the key projects along with an impact assessment to the end users and organizations This allows us to oversee, plan and execute knowing the impacts and outcomes.

2. Operations and Organization: The key operational and organizational changes within the CIO office are underway. The key change management and realignments to the business group recommendations need to be implemented.

Financial Implications (Business Case Not Required)

Finally, we summarize the financial aspects of the strategy, including capital and operating.

Capital: The majority of the project implementations could be carried out under the current capital plan of $45m per year over the next three years. Some of the projects will need business cases defined and will require additional capital investment. An incremental amount of $32-38m may be required. We will refine this amount as we develop the plans for key projects in EARG, field operations, safety, finance, HR/payroll, and project management.

Operating: We anticipate, with the planned projects, we would have a reduced sustainment cost for IT. This reduced amount, initially estimated at $6-8m per year, is primarily due to reduced sustainment costs only within the CIO office. We have not developed the additional savings that may exist in the business units or additional business benefits from the new projects or optimization within the business units.

From: Stuckert, Don </O=BCHYDRO/OU=LM6/CN=RECIPIENTS/CN=DSTUCKER>
Sent: 04/29/2008 06:51:46 am
To: Reid, Charles <Charles.Reid@bchydro.com>
Cc:
Bcc:
Subject: RE: Talk tomorrow?

Hi Charles. Will do. Don

Don Stuckert
Acting CIO, BC Hydro
don.stuckert@bchydro.bc.ca
604.319.4171
This email may contain privileged and confidential material and its transmission is not a waiver of that privilege. It is intended for the sole use of the person to whom it is addressed. Any copying, disclosure, distribution or reliance on this material other than the intended recipient is strictly prohibited. We assume no responsibility to persons other than the intended recipient. If you have received this transmission in error, please notify BC Hydro at 604.623.4000 immediately and destroy any copies you may have.
-----Original Message-----
From: Reid, Charles
Sent: April 29, 2008 6:50 AM
To: Stuckert, Don
Subject: Re: Talk tomorrow?

Hi Don,

I'm on my way in and should be in my office by 730, do you think you could give me on on call then?

Thx

----- Original Message -----
From: Stuckert, Don
To: Reid, Charles
Sent: Tue Apr 29 06:46:56 2008
Subject: RE: Talk tomorrow?

Hi Charles

Sorry, I was tied up in a SMI workshop until late last night. Today I am hosting a joint session with Hydro and Accenture. I am okay until 8:30 and will have breaks in the morning (10:30), or at lunch.

I can step out of the meeting after 9:30 if need be. I will watch for your call. Thanks, Don

Don Stuckert

Acting CIO, BC Hydro

don.stuckert@bchydro.bc.ca

604.319.4171

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From: Reid, Charles
Sent: April 28, 2008 4:31 PM
To: Stuckert, Don
Subject: Talk tomorrow?

HI Don, Any chance we could get together tomorrow at 9:00, even by phone if you are otherwise tied up? I need to update you on ET and Board materials, as well as upcoming meetings. I'm away to Toronto tomorrow afternoon and Wednesday and need to get the board material finished by tomorrow before I leave.

Charles

2.0 A. BACKGROUND

Reference: SAP AS THE DEFAULT ERP SOLUTION (2008-2009)
Exhibit B-3: Section 2.2, pp. 11-12; Attachments 2, 6, 7
Executive Summary: IT&T Update on strategy development, submitted by: Corporate Resources, May 22, 2008 Audit and Risk Management Committee Meeting of the Board (May 2008 ARMC)

Page 5 of Attachment 6 of the Consolidated Information Filing states under the heading "Resolutions from ET Meeting May 12th 2008": "The following recommendations were approved at an extended team including executive team members and representatives from the business groups."

1.2.4 Who prepared/wrote the first four pages of this Executive Summary?

RESPONSE:

The Executive Summary document provided as Attachment 2 of the Consolidated Information Filing (Exhibit B-3) was prepared by BC Hydro's Chief Information Officer Mr. Stuckert and Mr. Reid (at the time Mr. Reid was a consultant to BC Hydro with the title of Executive Project Advisor), with direction from Chief Executive Officer Mr. Elton.

2.0 A. BACKGROUND

Reference: SAP AS THE DEFAULT ERP SOLUTION (2008-2009)
Exhibit B-3: Section 2.2, pp. 11-12; Attachments 2, 6, 7
Executive Summary: IT&T Update on strategy development, submitted by: Corporate Resources, May 22, 2008 Audit and Risk Management Committee Meeting of the Board (May 2008 ARMC)

Page 5 of Attachment 6 of the Consolidated Information Filing states under the heading "Resolutions from ET Meeting May 12th 2008": "The following recommendations were approved at an extended team including executive team members and representatives from the business groups."

1.2.5 When was the meeting held (i.e. date) which resulted in the final two pages of the Executive Summary (i.e. Attachment 6) and who was in attendance?

RESPONSE:

As discussed in BC Hydro's response to BCUC IR 1.2.3, as of April 28, 2008 BC Hydro's Chief Executive Officer Mr. Elton was "uncomfortable" with putting forward the recommendations of Mr. Stuckert as a final IT strategy. Mr. Elton agreed to a meeting of the Executive Team (ET) on May 12, 2008 to start the dialogue on the IT strategy (refer to Attachment 2 to the response to BCUC IR 1.2.3).

The following documents were distributed to the ET members for the IT portion of the May 12, 2008 meeting:

1. The agenda at Attachment 4 of the Consolidated Information Filing; and

2. Mr. Reid (at the time Mr. Reid was a consultant to BC Hydro with the title of Executive Project Advisor) also provided ET members with a memorandum dated May 2, 2008. The subject of the memorandum is "May 12th Discussion on IT Strategy", and a copy is attached to this response as Attachment 1. The memorandum indicates that two documents were attached to it: a "draft IT strategy working paper" and the "executive summary on IT strategy progress included in the board package". BC Hydro does not have a specific record of the documents attached to Mr. Reid's memorandum because Mr. Reid personally delivered the documents (refer Attachment 2 to this response: 3:17 5/2/08 email from Charles Reid to Don Stuckert). However, it appears that

- **The "draft IT strategy working paper" was the presentation at Attachment 3 of the Consolidated Information Filing, and**

- **The "executive summary" document was the four-page Executive Summary at Attachment 2 to the Consolidated Information Filing.**

There are no minutes of the ET meeting on May 12, 2008 nor a record of who was in attendance. Mr. Reid's memorandum suggests that the ET members and one or two people from each executive's group was invited.

Mr. Reid's memorandum indicates that he wanted the May 12 meeting to result in at least the following:

"1. Agreement on ET governance and what that looks like, including mandate

2. Agreement on whether a sub-committee is appropriate (this may be your people that are in the meeting)

3. If the sub-committee idea is accepted, mandate of that committee

4. Approach to current IT backlog and priorities (capital, business cases, etc.)

5. Approach to critical timing issues such as in Finance with IFRS

6. Overall, greater understanding of IT issues

7. Next steps"

Following the May 12 meeting, Mr. Stuckert prepared the final two pages of Attachment 6 of the Consolidated Information Filing representing his notes of what was agreed to at the meeting.

The final two pages dated May 20, 2008 were not part of the Executive Summary provided to the ARMC in advance of their May 22, 2008 meeting. The minutes of the ARMC meeting do not indicate whether there was any discussion of SAP or a strategy to make SAP the default solution for ERP initiatives, and the ARMC passed no resolution with respect to any aspect of IT&T strategy. These minutes are at Attachment 7 of the Consolidated Information Filing.

In an email dated 10:42 10/21/08, Mr. Stuckert's assistant Meena Lee stated that "Don… said that the Board did not approve the IT Strategic Plan principles" in reference to the May 2008 Executive Summary document. A copy of this email is provided as Attachment 1, document 15 to BC Hydro's response to DIX IR 1.24.0.

BC hydro

reliable power,
at low cost,
for generations

Inter-office memo - CONFIDENTIAL

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Office of the President & CEO
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ACTION:

To: Bob Elton, Teresa Conway, Bev Van Ruyven, Chris O'Riley, Gary Rodford, Susan Yurkovich, Ray Stewart, Trish Pekeles, Lois Nahirney, Mary Hayles

May 2, 2008

From: Charles Reid

CC: Don Stuckert

Subject: May 12th Discussion on IT Strategy

As discussed at ET, we are preparing for the two hour discussion agreed to at our last meeting. Attached for your review find the draft IT strategy working paper, and the executive summary on IT strategy progress included in the board package. Bear in mind that ALL of this material should be considered confidential and in draft, and is not for general distribution. Also, please be mindful that the organization is already very anxious about this. Until decisions are made, it can and already has created an adverse reaction in some areas who have assumed certain decisions have been made.

Also upon reflection, although we agreed to have one additional person from each of your areas that would join this meeting, I think it would be more effective to have two in some groups. As an example, Field Operations may wish to have both a Finance person, and an Operations person present. This would probably not be necessary for all, but for the larger groups (FO, EARG, CCC) I would recommend it. The objective is to have a healthy dialogue with those who know the current IT status and risks in your areas.

Our goal is to present the proposed concept and philosophy of the IT approach. Among other things, we intend to discuss concerns including current delayed projects, myths about IT resources, phasing, critical timing issues i.e. International Financial Reporting Standards (IFRS), other constraints, current negative people impacts with our status quo, and gain consensus on next steps. We should come out of the meeting with at least the following:

1. Agreement on ET governance and what that looks like, including mandate
2. Agreement on whether a sub-committee is appropriate (this may be your people that are in the meeting)
3. If the sub-committee idea is accepted, mandate of that committee
4. Approach to current IT backlog and priorities (capital, business cases, etc.)
5. Approach to critical timing issues such as in Finance with IFRS
6. Overall, greater understanding of IT issues
7. Next steps

Perhaps it is a lot to expect for one meeting, but we will do our best. Please come to this meeting with an open mind, positively, and an eye for the art of the possible. This whole area has significant risk, but it can be managed and risk is far greater by standing still. I will be attempting to find time to discuss your key concerns with as many of you as possible, prior to May 12th.

Charles

From: Reid, Charles <Charles.Reid@bchydro.com>
Sent: 05/02/2008 03:17:52 pm
To: Stuckert, Don <Don.Stuckert@bchydro.com>
Cc:
Bcc:
Subject: Update

Hi Don,

Didn't need you after all regarding my message to call me, we sorted it out.

Also, put the note and package together regarding the May 12th meeting. I have one for you as well, but you can have your AA pick up on Monday. I have spoken to Chris and Bev so far and they both are willing to have meetings with us next week, so Loretta has been trying to set up. I gave a brief overview of what we are trying to accomplish and both seemed supportive.

Haven't spoken to Gary yet and will have to try and find him on Monday, I have been reluctant to just send it to out without personally delivering it, and speaking about it. Same with Ray and Teresa, but again, hope to find them on Monday. Trish, Susan, and Lois all have been given copies.

Key will now be to find the time to discuss next week (with the most key people at the very least) but we have to find the time. Also in actually coming up with the appropriate overhead prompts to provide info and get the dialogue going, and ensuring we have the right decisions and take-aways from the meeting.

Charles

P.S. I suggested to Trish she have David come to the May 12th meeting.

2.0 A. BACKGROUND

Reference: SAP AS THE DEFAULT ERP SOLUTION (2008-2009)
Exhibit B-3: Section 2.2, pp. 11-12; Attachments 2, 6, 7
Executive Summary: IT&T Update on strategy development, submitted by: Corporate Resources, May 22, 2008 Audit and Risk Management Committee Meeting of the Board (May 2008 ARMC)

Page 5 of Attachment 6 of the Consolidated Information Filing states under the heading "Resolutions from ET Meeting May 12th 2008": "The following recommendations were approved at an extended team including executive team members and representatives from the business groups."

1.2.6 Who prepared/wrote the last two pages of this Executive Summary?

RESPONSE:

Please refer to BC Hydro's response to BCUC IR 1.2.5.

2.0 A. BACKGROUND

Reference: SAP AS THE DEFAULT ERP SOLUTION (2008-2009)
Exhibit B-3: Section 2.2, pp. 11-12; Attachments 2, 6, 7
Executive Summary: IT&T Update on strategy development, submitted by: Corporate Resources, May 22, 2008 Audit and Risk Management Committee Meeting of the Board (May 2008 ARMC)

Page 5 of Attachment 6 of the Consolidated Information Filing states under the heading "Resolutions from ET Meeting May 12th 2008": "The following recommendations were approved at an extended team including executive team members and representatives from the business groups."

1.2.7 From an authorization/approval standpoint, what are the implications of the passing of "resolutions" by the Executive Team?

RESPONSE:

There are no formal implications from an authorization or approval standpoint. The Executive Team does not have any formal authority, as a group, to approve financial transactions or set corporate policy. Under BC Hydro's governance framework, decision making authority is generally either vested in the Board of Directors, a Committee of the Board, or an individual member of management such as the Chief Executive Officer, Chief Financial Officer, an Executive Vice-President, or delegate. The "approval" of a recommendation by the Executive Team refers colloquially to the informal endorsement by consensus of a proposed course of action to be taken in accordance with BC Hydro's governance framework as described above.

2.0 A. BACKGROUND

Reference: SAP AS THE DEFAULT ERP SOLUTION (2008-2009)
Exhibit B-3: Section 2.2, pp. 11-12; Attachments 2, 6, 7
Executive Summary: IT&T Update on strategy development, submitted by: Corporate Resources, May 22, 2008 Audit and Risk Management Committee Meeting of the Board (May 2008 ARMC)

Page 5 of Attachment 6 of the Consolidated Information Filing states under the heading "Resolutions from ET Meeting May 12th 2008": "The following recommendations were approved at an extended team including executive team members and representatives from the business groups."

1.2.8 Please confirm, or explain otherwise, that the six-page IT&T Strategy Update Executive Summary, which includes the resolutions from the Executive Team meeting of May 12, 2008, were submitted to the Risk Management Committee (ARMC) Board Meeting on May 22, 2008.

RESPONSE:

BC Hydro is not able to confirm whether or not the final two pages (see Attachment 6 of the Consolidated Information Filing) were provided to the Audit and Risk Management Committee of the Board at the May 22, 2008 meeting. Please refer to BC Hydro's response to BCUC IR 1.2.5.

2.0 A. BACKGROUND

Reference: SAP AS THE DEFAULT ERP SOLUTION (2008-2009)
Exhibit B-3: Section 2.2, pp. 11-12; Attachments 2, 6, 7
Executive Summary: IT&T Update on strategy development, submitted by: Corporate Resources, May 22, 2008 Audit and Risk Management Committee Meeting of the Board (May 2008 ARMC)

Page 5 of Attachment 6 of the Consolidated Information Filing states under the heading "Resolutions from ET Meeting May 12th 2008": "The following recommendations were approved at an extended team including executive team members and representatives from the business groups."

1.2.9 The Executive Summary document refers frequently to "we" when describing the processes and recommendations contained in the document. Please explain who the "we" is referring to.

RESPONSE:

In some cases, the "we" in Attachment 6 is referring to BC Hydro and in other cases it refers to the OCIO or the team working on IT&T strategy development.

2.0 A. BACKGROUND

Reference: SAP AS THE DEFAULT ERP SOLUTION (2008-2009)
Exhibit B-3: Section 2.2, pp. 11-12; Attachments 2, 6, 7
Executive Summary: IT&T Update on strategy development, submitted by: Corporate Resources, May 22, 2008 Audit and Risk Management Committee Meeting of the Board (May 2008 ARMC)

Page 5 of Attachment 6 of the Consolidated Information Filing states under the heading "Resolutions from ET Meeting May 12th 2008": "The following recommendations were approved at an extended team including executive team members and representatives from the business groups."

1.2.10 Please confirm, or explain otherwise, that even though no specific SAP project initiatives were approved in May 2008 by the Executive Team, in order to achieve the IT&T strategies described in the May 2008 Executive Summary, implementation of specific SAP project initiatives would be required in order to adopt a "single ERP" system environment.

RESPONSE:

BC Hydro confirms that it could not achieve a single ERP with SAP as the core without implementing SAP projects. It was anticipated that SAP would be used as the platform for ERP projects as business requirements emerge, SAP is determined to meet the business need and the business case is approved. Please refer to BC Hydro's response to BCUC IR 1.1.2.

2.0 A. BACKGROUND

Reference: SAP AS THE DEFAULT ERP SOLUTION (2008-2009)
Exhibit B-3: Section 2.2, pp. 11-12; Attachments 2, 6, 7
Executive Summary: IT&T Update on strategy development, submitted by: Corporate Resources, May 22, 2008 Audit and Risk Management Committee Meeting of the Board (May 2008 ARMC)

BC Hydro states on page 11 of the Consolidated Information Filing: "The strategic policy decision to use SAP as the default ERP, as explained above, was made in May 2008. Also in May 2008, BC Hydro's Audit and Risk Management Committee (ARMC) of the Board of Directors was given an update on the IT&T strategy development."

BC Hydro further states on pages 11-12: "Although the ARMC meeting materials included the information quoted above, the minutes of the ARMC meeting do not indicate whether there was any discussion of SAP or a strategy to make SAP the default solution for IT&T initiatives, and the ARMC passed no resolution with respect to any aspect of the IT&T strategy."

Attachment 7, page 5 provides the summary of minutes from the ARMC meeting related to IT&T – Strategy Development.

1.2.11 Please explain the purpose of the presentation of the IT&T Strategy at the ARMC meeting and what resulted from this meeting (either formally or informally).

RESPONSE:

The purpose of the IT&T Strategy presentation was to provide the ARMC with an annual report on IT&T Strategy as mandated by the Terms of Reference of the ARMC in effect at the time and as part of the ARMC's broader risk management mandate. The Terms of Reference of the Audit & Risk Management Committee (effective May 2007) are Attachment 1 to this response.

The annual report on IT&T Strategy was originally scheduled to be presented during the fourth quarter of F2008, but, as noted in the minutes of the February 12, 2008 ARMC meeting (Attachment 2), it was deferred to the May 2008 meeting.

As the IT&T Strategy presentation was for informational purposes only, nothing specifically resulted from this presentation.

TERMS OF REFERENCE FOR THE AUDIT AND RISK MANAGEMENT COMMITTEE

Purpose

Primary responsibility for the Corporation's financial reporting, accounting systems, risk management, management plans and budgets, internal controls and treasury is vested in management and overseen by the Board of Directors.

The purpose of the Audit and Risk Management Committee (the "Committee") is to assist the Board of Directors in fulfilling its obligations and oversight responsibilities relating to the audit process, financial reporting, the system of corporate controls, governance of the Corporation's pension plans, internal audit functions, risk management, and legal and environmental compliance programs and when required, make recommendations to the full Board of Directors for approval.

In the process of overseeing the Corporation's audit procedures, the Committee will have unrestricted access to the Corporation's personnel and documents, and will be provided with the resources necessary to carry out its responsibilities, including the authority to engage independent counsel and other advisers as part of this resource requirement.

In fulfilling its purpose, it is the responsibility of the Committee to maintain free and open communication between the Committee, the external auditors, the internal auditors, and management of the Corporation, and to determine that all parties are aware of their responsibilities.

The Board of Directors of BC Hydro's subsidiary, Powerex Corp., has appointed its own Audit and Risk Management Committee. That committee has its own terms of reference and reports directly to the Powerex Corp. Board of Directors.

Composition

The Committee will be composed of at least three independent Directors. Determination as to whether a particular Director satisfies the requirements for membership on the Committee shall be made by the full Board of Directors.

Committee members will have a working familiarity with finance and accounting practices, and at least one Committee member will have accounting or related financial management expertise.

The External Auditors will attend Committee meetings. The External Auditors will be notified of the Committee's meeting schedule and receive the appropriate meeting materials in advance of meetings.

The Corporate Secretary will be secretary to the Committee.

Duties and Responsibilities

The Committee, in carrying out its responsibilities, believes its policies and procedures should remain flexible, in order to best react to changing conditions and circumstances. The Committee will take appropriate actions to monitor the overall corporate 'tone' for quality financial reporting, sound business risk practices, and ethical behaviour.

Subject to the powers and duties of the Board, the Committee, which shall hold a minimum of four meetings per year, will perform the following duties:

Financial Reporting

Annual Financial Statements

The Committee will review the consolidated financial statements and Management Discussion and Analysis, and recommend their approval or disapproval to the Board of Directors. The Committee will provide an explanation if it cannot recommend approval. The review must include:

a) determining whether appropriate accounting methods are being applied;
b) discussing with management and with the External Auditors:
   - all proposed changes in accounting policy,
   - the import and presentation of all large risks or uncertainties,
   - compliance with accounting standards,
   - significant adjustments arising out of the audit process,
   - related party transactions, and discuss with management the business rationale for the transactions and whether appropriate disclosures have been made,
   - major issues as to the adequacy of the Corporation's internal control over financial reporting and any specific remedial actions adopted in light of significant deficiencies or material weaknesses,
   - consideration of the effect of regulatory and accounting initiatives, as well as off-balance sheet structures, on the financial statements,
   - consideration of the judgment of both management and the external auditors about the quality, not just the acceptability of accounting principles, and
   - the clarity of the disclosures in the financial statements,
   - all estimates or judgements of management that may be material to financial reporting;
c) discussing with management and the External Auditors significant financial reporting, recording or presentation issues discussed during the fiscal period and the manner of their resolution, and
d) examining the consolidated audited annual financial statements in conjunction with the report of the External Auditors, which may include determining whether the statements:
   - properly reflect the significant accounting policies selected,
   - reflect estimates and other financial statement elements that are reasonable and consistent,
   - adequately disclose all major transactions and issues,
   - disclose all post-year-end significant events, and
   - are understandable, relevant, reliable and comparable.

Quarterly Financial Reports

The Committee will review quarterly financial reports and related information and recommend their approval or disapproval to the Board of Directors. The Board of Directors has delegated approving authority of the quarterly financial report to the Committee, in the event the Board meeting schedule proves untimely.

The quarterly financial reports are required to be reviewed by the External Auditors prior to their submission to the Committee, the results of which are discussed with the Committee.

External Audit

The Committee shall have the direct responsibility for the appointment, compensation, retention and oversight of the External Auditors (including nominating the External Auditors to be proposed for Board approval). The Committee shall serve as the ultimate authority to which the Corporation's External Auditors are accountable. The Corporation shall provide appropriate funding, as determined by the Committee, for payment of compensation to the External Auditors and any experts or advisors employed by the Committee.

The Committee shall meet with the External Auditors, as the Committee may deem appropriate, to consider any matter which the Committee or External Auditors believe should be brought to the attention of the Board or the Shareholder.

The Committee will oversee the external audit process, including:

a) determining whether the performance of the external audit is satisfactory, effective and meets the requirements of the Corporation;
b) reviewing all issues related to any proposed change in External Auditors and the planned steps for an orderly transition;
c) reviewing the terms of the External Auditors' engagement, and the appropriateness and reasonableness of the proposed audit fees;
d) review on a quarterly basis the amount of fees paid to the External Auditors and their affiliates for audit related and non-audit consulting services provided to the Corporation and its subsidiaries in accordance with best practices at public corporations;
e) at the request of management, pre-approve fee levels for audit related and non-audit related services provided to the Corporation by its External Auditors. The Committee has delegated such pre-approval to the Committee Chair on its behalf and requested management to report to the Committee on a quarterly basis;
f) reviewing the audit plan with the External Auditors and management;
g) determining whether management has provided full and open disclosure to the External Auditors' inquiries;
h) reviewing problems experienced by the External Auditors in performing the audit, including any restriction imposed by management and all significant accounting issues on which there was a disagreement with management;
i) reviewing the post-audit or management letter containing the recommendations of the External Auditors and reviewing management's response and subsequent follow-up to any significant identified weaknesses.
j) review and discuss with the External Auditors all relationships that the External Auditors and their affiliates have with the Corporation and its affiliates in order to determine the External Auditors' independence, including, without limitation (i) requesting, receiving and reviewing, on a periodic basis, a formal written statement from the External Auditors delineating all relationships that may reasonably be thought to bear on the independence of the External Auditors with respect to the Corporation (ii) discussing with the External Auditors any disclosed relationships or services that the External Auditors believe may affect the objectivity and independence of the External Auditors, and (iii) recommending that the Board take appropriate action in response to the External Auditors' report to satisfy itself of the External Auditors' independence;
k) at least annually, obtain and review a report by the External Auditors describing the auditing firm's internal quality-control procedures, any material issues raised by the most recent internal quality-control review or peer review of the auditing firm or by any inquiry or

investigation by government or professional authorities within the preceding five years respecting one or more independent audits carried out by the External Auditors and any steps taken to deal with any such issues and all relationships between the External Auditors and the Corporation.

l) After reviewing the foregoing report and the External Auditors' work throughout the year, the Committee shall evaluate the External Auditors' qualifications, performance and independence. Such evaluation should include the review and evaluation of the lead audit partner and take into account the opinions of management and the Corporation's personnel responsible for the internal audit function.

Accounting System and Internal Controls

Through discussions with management and the External and Internal Auditors, the Committee will obtain reasonable assurance that the Corporation's accounting systems are reliable and internal controls are adequate. For this purpose, the Committee may wish to direct the Auditors' examinations to particular areas and may request the Auditors to undertake special examinations.

The Committee will review the evaluation of internal controls by the External Auditors, including any recommendations for improvement of the Corporation's accounting procedures and internal controls, together with management's response.

Internal Audit

The Committee will annually review the Internal Audit Plan and the Audit Services Charter.

The review of the Internal Audit Plan should include an examination of the key risks identified for the organization and the appropriateness of Internal Audit resources. The review of the Audit Services Charter should ensure appropriateness of mission, accountability and scope of work for Internal Audit.

The Committee will also review audit reports issued by Internal Audit, management's response and subsequent follow-up of identified weaknesses. The review of audit reports will include:

a) identification of significant risk exposures;
b) assessment of the adequacy of the Corporation's internal controls, and
c) recommendations for the improvements of the Corporation's internal controls.

In order to focus on key risk areas, the Committee will only review the full audit report for reports identified as high risk by Internal Audit. However, executive summaries will be reviewed for all reports issued and the Committee will be provided with low and medium risk internal audit reports upon request.

The Committee Chair will meet privately with the Director, Internal Audit in advance of each Committee meeting to discuss all items to be presented.

In accordance with the Procedures for Confidential Reporting of Financial Concerns (an attachment to the *Director and Employee Code of Conduct)*, Internal Audit will provide quarterly reports to the Committee and to the Code of Conduct Advisor.

Other Responsibilities

The Committee will:

a) review the status of pending or threatened material litigation and confirm with management whether there has been any reported evidence of a material violation of any laws or breach of fiduciary duty or similar violation that may not have reached the litigation stage;
b) ascertain whether the Corporation's financial results and condition satisfy the criteria for lenders, material agreements, applicable laws and insurers;
c) before public disclosure, review any formal financial reports on the condition or results of the Corporation including the Annual Report;

d) annually review a listing of all expenditures incurred by the Corporation with external audit firms, other than those fees related to BC Hydro's own External Auditors which will be reported as previously described;
e) draw to the attention of the Board of Directors all financial matters of which the Committee has knowledge and which may materially affect the current or future financial position of the Corporation;
f) confirm that appropriate policies and procedures are in place for monitoring compliance with legislation, applicable laws, business and industry practices and ascertain their adequacy and the levels of compliance;
g) receive reports on the status of any investigations underway pertaining to fraud, illegal acts or other compliance issues;
h) review and recommend the annual Service Plan to the Board of Directors for approval;
i) review and recommend the Five Year Forecast to the Board of Directors for approval;
j) annually review executive management and Board of Director expense reporting,
k) review and approve the hiring policies of the Corporation regarding any partners and employees, and former partners and employees of the present and former External Auditors of the Corporation, and
l) review such other matters that the Committee or the Board of Directors deems advisable or timely.
m) the Committee shall review and reassess the terms of reference at least annually.

Pension Plans

The Committee will:

a) establish and review membership, procedures and Terms of Reference for the corporate Pension Management Committee (PMC);
b) review with management the annual pension report and financial statements of the Corporation's pension plans including the actuarial valuation, Plan funded status, asset/liability forecast, asset allocation, manager performance and Plan operating costs;
c) review and recommend to the Board of Directors any proposed changes to accounting and investment policies of the pension plans;
d) adopt, and revise from time to time, a Funding Policy for the British Columbia Hydro and Power Authority Pension Plan;
e) approve the actuarial methods and assumptions used for funding valuations of the BC Hydro Pension Plans and approve BC Hydro's contributions to the BC Hydro Pension Plans;
f) review and recommend to the Board of Directors the termination of investment managers;

g) review the appointment and termination, for the BC Hydro pension plans, of actuaries, fund holders, advisors, administrators, External Auditors, investment managers; and performance measurement services;
h) review and recommend changes to the Board of Directors with respect to the design and benefit levels of the pension plans; and
i) at the request of the Board of Directors, and as appropriate, delegate to the PMC such other tasks relating to the operation of the pension plans that may be required from time to time.

Risk Management

The Audit and Risk Management Committee reviews the management of principal risks not identified as the responsibility of other Committees of the Board of Directors. This Committee is the lead Committee for ensuring systems are in place to identify, manage, and monitor principal risks. Through its review of reports from the corporate Risk Management Committee, corporate Pension Management Committee and other areas of the Corporation, the Audit and Risk Management Committee will assess the appropriateness and consistent application of systems to manage principal risks within the Corporation and ensure that key matters of risk are brought forward for action by the Board and management.

The Corporate Governance and Human Resources Committees of the Board of Directors take responsibility for monitoring risks directly related to their respective mandates.

The Chief Executive Officer and Chief Financial Officer of the Corporation, with advice from the Chief Risk Officer and the corporate Risk Management Committee ("RMC") are responsible for establishing processes, procedures and mechanisms by which key matters of risk are identified, and ensuring that strategies are developed to manage such risks.

The Committee will receive quarterly reports from the RMC, and from other areas of the Corporation as considered appropriate or timely by the Committee or by the Board of Directors.

In particular, the Committee will review with management to determine whether policies and procedures are in place to identify, manage and monitor material risk including, but not limited to:

a) interest rates, foreign exchange, debt, credit and commodity prices and hydro inflows;
b) risks of low probability and high impact events and disaster preparedness;
c) environmental policies and practices including the sufficiency of the Corporation's environmental management system;
d) security of electricity supply including asset risk;
e) aboriginal negotiations and major consultations;
f) directors' and officers' liabilities, as well as processes to mitigate them, including indemnification and insurance as appropriate;
g) insurance management strategies;
h) information technology strategies, and
i) such other risk issues of concern to the Committee, the Board of Directors and management.

Accountability

The Committee will report its discussions to the Board of Directors by distributing the minutes of its meetings, and where appropriate, by oral report to the Board of Directors with respect to every major matter considered since the last meeting.

Committee Timetable

The timetable below outlines the Committee's schedule of activities during the year.

COMMITTEE TIMETABLE

	Q1	Q2	Q3	Q4
Review and recommend Board approval of the Audited Financial Statements	✓			
Review and recommend Board approval of quarterly financial reports		✓	✓	✓
Review External Auditor independence and quality control procedures		✓		
Recommend appointment of External Auditors to Board, monitor performance and determine whether External Auditors are satisfactory		✓		
Review the terms of the External Auditors' engagement, proposed audit fees and the experience and qualifications of senior audit personnel		✓		
Annually approve audit/non-audit pre-approval policy and receive quarterly summaries of pre-approvals by Chair (in-camera)	*Policy Approval*	✓	✓	✓
Review audit plan with External Auditors, ascertaining whether management has provided full and open disclosure		✓		
Through communication with management, Internal Auditors and External Auditors, obtain assurance that accounting systems are reliable, and internal controls adequate	✓	✓	✓	✓
Review annual Internal Audit Plan		✓		
Review Internal Audit reports, management reponse and any subsequent follow-up	✓	✓	✓	✓
Ascertain that financial results satisfy criteria for lenders, material agreements, applicable laws and insurers, and review before public disclosure	✓	✓	✓	✓
Receive quarterly summary of any reporting of financial concerns to the Code of Conduct Advisor	✓	✓	✓	✓
Review and recommend approval of the annual Service Plan to the Board				✓
Review and recommend Five Year Forecast to the Board of Directors for approval;	✓	✓	✓	✓
Review executive expense reporting.	✓	✓	✓	✓
Receive annual and quarterly standing reports from the corporate Pension Management Committee, approve changes to Committee membership, its terms of reference and to the British Columbia Hydro and Power Authority Pension Plan Funding Policy as required	**Annual**	✓	✓	✓

COMMITTEE TIMETABLE

	Q1	Q2	Q3	Q4
Make recommendations to the Board respecting pension plan design, benefit levels and investment performance etc. and: • review Pension Plan Audited Statements • review Statement of Investment Policies • approve actuarial methods and assumptions • approve BC Hydro's contributions to the Pension plans • receive actuarial valuation of Plan on a tri-annual basis • Receive pension fund asset allocation review, and make recommendations to Board (every 3-5 years)	✓			
Receive standing report from corporate Risk Management Committee	✓	✓	✓	✓
Review Environmental Policies & Practices	✓	✓	✓	✓
Review Information Technology Strategies				✓
Review Insurance Management Strategies		✓		✓
Review status of pending/threatened litigation	✓	✓	✓	✓
Review External Reporting of Financial Information				✓

BC hydro

MINUTES of a Meeting of the
AUDIT AND RISK MANAGEMENT COMMITTEE of the BOARD OF DIRECTORS

18th Floor Boardroom, BC Hydro Dunsmuir Office, Vancouver, BC
Tuesday, 12 February 2008

Present
Wanda Costuros (Chair), Brenda Eaton, Nancy Olewiler, Mossadiq Umedaly (Ex-Officio)

Also Present
Tracey McVicar, Peter Powell, Special Advisor to the Board of Directors

Absent
Walter Saponja

In Attendance
Bob Elton, Alister Cowan, Henry Honda, Renata Kurschner – Item 4, Yale Loh – Item 7, Chris O'Riley – Item 4, Gurj Parmar, Diana Seehagen, Myra Watson, David Wong

Nick Argue, Nicole Poirier - Ernst & Young LLP

The Chair called the meeting to order at 8:00 a.m., and introduced Nicole Poirier who was attending with Nick Argue on behalf of Fred Withers, Ernst & Young, LLP.

Meeting Notation: Due to Government reporting requirement timelines, approval of the Third Quarter Report for the Period Ended 31 December 2007; Report of the External Auditors; Updated Five Year Forecast and Fiscal 2009 – Fiscal 2011 Financial Plan; Fiscal 2008 Service Plan; Fiscal 2009 – Fiscal 2011 Revenue Requirements Application and the Residential Inclining Block Rate/Rate Restructuring Update was received at a Special Joint Meeting of the Audit and Risk Management Committee and Board of Directors held 30 January 2008.

APPROVALS and REPORTS

1. Adoption of Minutes – 30 October 2007
The minutes of the meeting held 30 October 2007 were adopted.

2. Report of the Internal Auditor
Henry Honda presented the internal audit report for the period ended 31 December 2007.

Mr. Honda focused his report on the scope, key findings and recommendations related to two BC Hydro audits conducted regarding enhancement of privacy protection and payroll processes.

Mr. Honda confirmed that while BC Hydro has undertaken appropriate initiatives to enhance privacy protection, opportunities to improve their effectiveness were identified in the areas of privacy training and records management policy and process. He advised that as of 31 January, 80% of BC Hydro employees have completed privacy training and that a records management policy is going forward for Board approval on 13 February 2008.

2. Report of the Internal Auditor

Mr. Honda then discussed the findings relative to a payroll processes audit which found generally clear direction and assignment of roles and responsibilities between BC Hydro and Accenture Business Services of British Columbia Limited Partnership (ABSU) in place, with areas for improved policy setting, record retention and identification and enforcement of key controls identified.

He also referenced the results of an audit assessing the accuracy and timeliness of third party contract pass-through costs charged by ABSU to BC Hydro and two Powerex audits regarding custom contract and purchasing and disbursement controls, details of which were previously provided to the Powerex Audit and Risk Management Committee.

Mr. Honda ended his report with a review of the audit follow-up report.

3. Risk Management Quarterly Report for the Period Ended 31 December 2007

Gurj Parmar presented the quarterly risk report which provides a rolling summary on the status of key risks relative to the Corporation's short term priorities. The Risk Compliance Report was also provided with the meeting materials.

Mr. Parmar summarized key changes in the risk environment experienced since the last meeting which includes ratepayer acceptance of the pending revenue requirement application, ability to implement and adapt to the smart meter infrastructure initiative and various First Nations consideration relative to regulatory processes, capital projects and energy purchase agreements. Mr. Parmar also spoke to the short and longer term risk associated with Fort Nelson supply-demand requirements.

The Committee commented on the complexity of the risk report, with Management to consider options to simplify and standardize reporting and development of a report that tracks and compares risk on an annual basis.

4. Commodity Risk Management Policy Revisions

In February 2005 the Board of Directors approved a Commodity Risk Management Policy for Short Term Domestic Obligations. The Policy's intent is to give context to the relevant risk management activities, objectives, roles and responsibilities, risk limits, and approval levels associated with short term domestic market transactions.

Since 2005, management has gained additional experience with risk management mechanics, analytical tools, governance, reporting and approval processes and is requesting Committee approval to revise the Policy to reflect this experience. The purpose of the revised Policy and associated hedging procedures is risk reduction for the benefit of the BC Hydro ratepayers.

With Chris O'Riley present, Renata Kurschner summarized the principles and key policy changes, details of which were more fully described in the materials provided. In depth discussion on price volatility, the hedging concept, its application and management as well as its costs and benefits ensued. Ms. Kurschner noted hedging of both gas and electricity will be reviewed by the British Columbia Utilities Commission (BCUC) as part of the upcoming revenue requirement hearing.

4. Commodity Risk Management Policy Revisions (Con'd)

RESOLVED THAT the Audit and Risk Management Committee recommends to the Board of Directors that the *Commodity Risk Management Policy for Short Term Domestic Market Transactions* dated 12 February 2008 be approved and adopted in replacement of BC Hydro's existing *Commodity Risk Management Policy for Short Term Domestic Obligations* dated 15 February 2005, details of which were presented to the Committee and filed with the records of this meeting.

5. Financial Responsibility Policy and Approving Authorities Corporate Procedure Revisions
(Expenditure Authorization Policy and Delegation of Special Authorities)
David Wong provided a high level summary on various changes proposed to the Financial Responsibility Policy which documents BC Hydro's financial approval levels and the delegation of this responsibility. Associated with this Policy are Board delegated approvals to senior management, which includes special authorities in respect of specific transactions. Numerous updates since its issue in 1998 has made the Policy difficult to interpret and a resulting review has identified various changes to consolidate, simplify and streamline the expenditure authorization process.

Following discussion on the approval levels criteria, risk management and financial oversight considerations, as well as a request to consider an audit on Policy compliance, it was

RESOLVED THAT subject to minor revision, the Audit and Risk Management Committee recommends the Board of Directors approve the *Financial Responsibilities Policy and Delegation of Special Authority* dated 12 February 2008 in replacement of BC Hydro's existing *Financial Responsibilities Policy* dated 19 January 2006, details of which were presented to the Committee and filed with the records of this meeting.

6. Revised Records and Information Corporate Policy
Except for administrative changes, BC Hydro's Information Management Corporate Policy Statement has not changed since its release in 1998. Alister Cowan discussed proposed Policy revisions recommended to address current best practices, new requirements for information management, changes to privacy legislation and address recommendations proposed under the Enhancement of Privacy Protection audit presented earlier in the meeting. Once adopted, the Policy will be communicated to employees and related standards and procedures amended or developed to support Policy implementation.

RESOLVED THAT subject to minor revision, the Audit and Risk Management Committee recommends the Board of Directors approve the revised *Records and Information Management Policy* in replacement of the existing *Information Management Policy* dated 12 May 1998 (revised 19 January 2006), details of which were presented to the Committee and filed for reference with the records of this meeting.

7. Insurance Management Coverage - Property and General Liability Renewal Strategy

Yale Loh provided a broad overview on the issues and conditions informing the Corporation's Fiscal 2009 property and general liability renewal strategy. Renewal is scheduled for 01 May 2008.

With on overview on market conditions and benchmarking comparators provided, Mr. Loh advised that no significant change to the current insurance program is proposed with the exception of introducing terrorism coverage under the property program. No reductions in premiums are expected with an update on actual costs to be provided at the May meeting.

8. External Reporting of Financial Information Annual Report

(Minute 7 – 13 February 2007)

Alister Cowan confirmed the Corporation's compliance with disclosing primary financial information and related documentation as required by legislation or in keeping with best practices, details of which were set out in the material provided.

Primary recipients for this information include the shareholder through various Provincial agencies, the British Columbia Utilities Commission and other Provincial and Federal agencies. Certain data are also posted on the Corporation's external web site.

9. Committee Terms of Reference Checklist

Recognizing that the information technologies strategy report has been deferred to the May meeting, the Chair confirmed that the Committee had addressed its quarterly obligations as defined under its Terms of Reference.

TABLED REPORTS

10. Accounting Standards Update

Referring to the report provided outlining the impact of recent and/or pending changes to CICA Accounting Standards, Mr. Cowan commented on the status of the transition to International Financial Reporting Standards (IFRS).

The Chair advised that a report on the status of the procurement to pay project will be provided quarterly moving forward.

11. Summary of Audit and Non-Audit Services

The summary of audit and non-audit pre-approved services provided by the External Auditors for the period ending 31 December 2007 was received as provided.

12. Financial Disclosure Quarterly Report – Period Ended 31 December 2007

The financial disclosure report prepared by the Code of Conduct Advisor confirmed there were no employee accounting / auditing concerns reported during the three month period ending 31 December 2007.

13. Pension Plan – Quarterly Fund Performance Report

A report summarizing pension plan performance results as of 30 September 2007 was received as presented.

14. Summary of Significant Legal Claims

A summary report on the status of legal claims over $5 million and a listing of other miscellaneous claims over $50,000 were received as presented.

15. Meeting Dates

A tutorial session will be held from 12:00 p.m. to 4:00 p.m. on Tuesday, 11 March 2008 on the Corporation's transition to International Financial Reporting Standards (IFRS).

A special Committee meeting will be held from 9:00 a.m. to 11:00 a.m. on Wednesday, 21 May 2008 to review the Fiscal 2008 Audited Financial Statements.

The next regular Committee meeting will occur from 8:00 a.m. to 11:00 a.m. on Thursday, 22 May 2008.

All meetings will take place at the BC Hydro Dunsmuir Office, 18th Floor Boardroom.

The regular meeting terminated at 9:45 a.m. and proceeded in-camera.

2.0 A. BACKGROUND

Reference: SAP AS THE DEFAULT ERP SOLUTION (2008-2009)
Exhibit B-3: Section 2.2, pp. 11-12; Attachments 2, 6, 7
Executive Summary: IT&T Update on strategy development, submitted by: Corporate Resources, May 22, 2008 Audit and Risk Management Committee Meeting of the Board (May 2008 ARMC)

BC Hydro states on page 11 of the Consolidated Information Filing: "The strategic policy decision to use SAP as the default ERP, as explained above, was made in May 2008. Also in May 2008, BC Hydro's Audit and Risk Management Committee (ARMC) of the Board of Directors was given an update on the IT&T strategy development."

BC Hydro further states on pages 11-12: "Although the ARMC meeting materials included the information quoted above, the minutes of the ARMC meeting do not indicate whether there was any discussion of SAP or a strategy to make SAP the default solution for IT&T initiatives, and the ARMC passed no resolution with respect to any aspect of the IT&T strategy."

Attachment 7, page 5 provides the summary of minutes from the ARMC meeting related to IT&T – Strategy Development.

1.2.12 At the time the presentation was made to the ARMC (i.e. May 2008), what were BC Hydro's established governance and oversight policies related to approvals for its IT&T strategy development? Please provide evidence of the policies existing at that time and discuss how the IT&T strategy development and decision to adopt SAP as a single ERP system tracked with BC Hydro's governance and oversight policies.

RESPONSE:

At the time the presentation was made, the terms of reference for the ARMC set out that the Committee shall "…review with management to determine whether policies and procedures are in place to identify, manage and monitor material risk including, but not limited to: … information technology strategies…". Please refer to the Risk Management section of the ARMC terms of reference in Attachments 7 and 8 of BC Hydro's response to BCUC IR 1.15.6.

Strategies of this nature fall within the operational responsibility of management, under the general oversight of the ARMC, as set out above. Such strategies do not require Board review or approval. Accordingly, BC Hydro's Executive team approved the 'SAP as the default solution for ERP applications' strategy and not the ARMC or the Board. The minutes of the May 22, 2008 ARMC meeting (Attachment 7 to the Consolidated Information Filing) indicate that IT&T strategy development was presented, which was in accordance with the term of reference above for ARMC oversight. Thus, there is no record of ARMC or Board approval of this strategy, which is not unexpected given the role of the ARMC and Board.

2.0 A. BACKGROUND

Reference: SAP AS THE DEFAULT ERP SOLUTION (2008-2009)
Exhibit B-3: Section 2.2, pp. 11-12; Attachments 2, 6, 7
Executive Summary: IT&T Update on strategy development, submitted by: Corporate Resources, May 22, 2008 Audit and Risk Management Committee Meeting of the Board (May 2008 ARMC)

BC Hydro states on page 11 of the Consolidated Information Filing: "The strategic policy decision to use SAP as the default ERP, as explained above, was made in May 2008. Also in May 2008, BC Hydro's Audit and Risk Management Committee (ARMC) of the Board of Directors was given an update on the IT&T strategy development."

BC Hydro further states on pages 11-12: "Although the ARMC meeting materials included the information quoted above, the minutes of the ARMC meeting do not indicate whether there was any discussion of SAP or a strategy to make SAP the default solution for IT&T initiatives, and the ARMC passed no resolution with respect to any aspect of the IT&T strategy."

Attachment 7, page 5 provides the summary of minutes from the ARMC meeting related to IT&T – Strategy Development.

1.2.13 At what point in the development of BC Hydro's IT&T strategy regarding adopting SAP as the default solution, if ever, did BC Hydro seek and obtain Board approval? Please explain.

RESPONSE:

Management did not seek or obtain Board approval for the decision to adopt SAP as the default solution. Under BC Hydro's governance framework, Board approval is not required to adopt a specific product as a default solution.

3.0 A. BACKGROUND

Reference: SAP AS THE DEFAULT ERP SOLUTION (2008-2009)
Exhibit B-3, Attachment 4
Executive team meeting agenda – May 12, 2008

In agenda item #5 of Attachment 4 of the Consolidated Information Filing, the following statement is included under "IT Update": "**Reminder: Charles distributed a report on May 2, please bring it.*"

1.3.1 Please provide a copy of this May 2nd report if available.

RESPONSE:

Please refer to BC Hydro's response to BCUC IR 1.2.5.

4.0 A. BACKGROUND

Reference: SAP AS THE DEFAULT ERP SOLUTION (2008-2009)
Exhibit B-3, Section 2.2, pp. 8-9
SAP as the default ERP solution

BC Hydro states on pages 8-9 of the Consolidated Information Filing:

The SAP Strategy recommended that when a business requirement arises, the SAP alternative will be examined to confirm whether the business need can be appropriately satisfied with SAP. If SAP does not meet the business need, a bolt-on solution would be considered…

…The choice of SAP as a default solution did not approve the implementation of SAP for any project initiatives. Rather, the decision meant that SAP would be evaluated on a project-by-project basis, and selected when it meets business needs. [emphasis added]

1.4.1 Please confirm, or explain otherwise, that as of May 2008, alternative ERP options would only be considered if SAP did not meet BC Hydro's business needs.

RESPONSE:

Confirmed. SAP was adopted as BC Hydro ERP technology standard in May 2008, with the intent being that it would be leveraged for ERP related functionality (i.e., default solution), as long as it meets the business needs.

4.0 A. BACKGROUND

Reference: SAP AS THE DEFAULT ERP SOLUTION (2008-2009)
Exhibit B-3, Section 2.2, pp. 8-9
SAP as the default ERP solution

BC Hydro states on pages 8-9 of the Consolidated Information Filing:

The SAP Strategy recommended that when a business requirement arises, the SAP alternative will be examined to confirm whether the business need can be appropriately satisfied with SAP. If SAP does not meet the business need, a bolt-on solution would be considered…

…The choice of SAP as a default solution did not approve the implementation of SAP for any project initiatives. Rather, the decision meant that SAP would be evaluated on a project-by-project basis, and selected when it meets business needs. [emphasis added]

1.4.2 Was the decision in 2008 described in the preamble above ever revisited to look at alternative options based on business needs without defaulting to SAP as the selected solution?

RESPONSE:

For ERP related functionality, SAP has been consistently looked at as the default solution since May 2008.

There are a few cases where SAP functionality was not considered a sufficiently good fit for BC Hydro's business needs, and therefore supplementary "bolt-on" solutions were added to the scope of the respective projects.

One example is the inclusion of Oracle Primavera P6 within the PPM project, which provided advanced project scheduling and forecasting capabilities. Another example was the inclusion of a tool (XFT) for employee record management within the EMPower project.

In all cases, since these "bolt-on" solutions supplement the functionality that resides primarily in SAP, the costs are included as "SAP-related" costs in all of the information BC Hydro has filed in the SAP Inquiry (as defined in section 3.1.1 of the Consolidated Information Filing).

Please also refer to BC Hydro's response to BCOAPO IR 1.5.1.

4.0 A. BACKGROUND

Reference: SAP AS THE DEFAULT ERP SOLUTION (2008-2009)
Exhibit B-3, Section 2.2, pp. 8-9
SAP as the default ERP solution

BC Hydro states on pages 8-9 of the Consolidated Information Filing:

The SAP Strategy recommended that when a business requirement arises, the SAP alternative will be examined to confirm whether the business need can be appropriately satisfied with SAP. If SAP does not meet the business need, a bolt-on solution would be considered…

…The choice of SAP as a default solution did not approve the implementation of SAP for any project initiatives. Rather, the decision meant that SAP would be evaluated on a project-by-project basis, and selected when it meets business needs. [emphasis added]

1.4.2 Was the decision in 2008 described in the preamble above ever revisited to look at alternative options based on business needs without defaulting to SAP as the selected solution?

1.4.2.1 Since May 2008, have any non-SAP alternatives (i.e. "bolt-on solutions") been selected instead of an SAP solution? If so, please provide specific examples and explain why the non-SAP alternatives were chosen.

RESPONSE:

Please refer to BC Hydro's response to BCUC IR 1.4.2.

4.0 A. BACKGROUND

Reference: SAP AS THE DEFAULT ERP SOLUTION (2008-2009)
Exhibit B-3, Section 2.2, pp. 8-9
SAP as the default ERP solution

BC Hydro states on pages 8-9 of the Consolidated Information Filing:

The SAP Strategy recommended that when a business requirement arises, the SAP alternative will be examined to confirm whether the business need can be appropriately satisfied with SAP. If SAP does not meet the business need, a bolt-on solution would be considered…

…The choice of SAP as a default solution did not approve the implementation of SAP for any project initiatives. Rather, the decision meant that SAP would be evaluated on a project-by-project basis, and selected when it meets business needs. [emphasis added]

1.4.3 Is BC Hydro still pursuing the SAP Strategy adopted in 2008? Specifically, is SAP still considered by BC Hydro as the default choice and only if proven that SAP cannot fulfill business needs are alternatives investigated?

RESPONSE:

Yes, BC Hydro is still pursuing the SAP Strategy adopted in 2008 and SAP remains BC Hydro's technology standard for ERP applications.

Note that BC Hydro also looks at its other technology standards in a similar manner. For example, BC Hydro defaults to IBM FileNet when it contemplates ECM (Enterprise Content Management) projects, or GE Smallworld when it contemplates GIS (Geographical Information Systems) projects, and TIBCO ESB (Enterprise Service Bus) for middleware when it needs to share information across platforms, etc.

This practice of looking first to the established technology standard continues today. This does not mean that BC Hydro's technology standards are static, as BC Hydro updates its standards as business requirements and market developments merit (e.g., emergence of cloud-based solutions).

4.0 A. BACKGROUND

Reference: SAP AS THE DEFAULT ERP SOLUTION (2008-2009)
Exhibit B-3, Section 2.2, pp. 8-9
SAP as the default ERP solution

BC Hydro states on pages 8-9 of the Consolidated Information Filing:

The SAP Strategy recommended that when a business requirement arises, the SAP alternative will be examined to confirm whether the business need can be appropriately satisfied with SAP. If SAP does not meet the business need, a bolt-on solution would be considered…

…The choice of SAP as a default solution did not approve the implementation of SAP for any project initiatives. Rather, the decision meant that SAP would be evaluated on a project-by-project basis, and selected when it meets business needs. [emphasis added]

1.4.4 Was a competitive tendering process used for all/most SAP-related project choices?

RESPONSE:

BC Hydro notes that it sought clarification on the scope and purpose of this question with Commission staff, and accordingly the answer to this series focuses primarily on BC Hydro's understanding of the Commission's interest, which is the role of competitive tendering around technology choices.

As discussed in section 2 of the Consolidated Information Filing, BC Hydro adopted SAP as its default ERP technology standard in 2008 in order to improve the overall effectiveness of its ERP environment. As indicated in BC Hydro's response to BCUC IR 1.4.5, technology choices for projects are made by applying and validating architectural technology standards. Competitive tendering is not typically used as part of the selection process.

With respect to the SAP product itself, the software is sold directly by SAP Canada; there are no other vendors that supply this software and competitive tendering is therefore not an option.

From an implementation services perspective (that is, unrelated to technology choices) BC Hydro notes that competitive tendering is used extensively by BC Hydro to secure contractors and/or service providers to implement SAP-related projects. Since 2008, BC Hydro has implemented the majority of its SAP-related projects using "SAP contractor" resources. In effect, these projects

are led by BC Hydro, supplemented with external resources. The external resources have typically been competitively procured as follows: BC Hydro established, via competitive RFSQ (Request for Supplier Qualification) process, a list of qualified SAP vendors (i.e., the "SAP QVP list"), and whenever BC Hydro requires a SAP contractor a secondary RFQ (Request for Quotation) competition is held amongst the qualified vendors. In some cases BC Hydro has also used system integrator services for SAP projects, but in these cases a full RFP is typically conducted rather than leveraging the "SAP QVP" list.

The following table summarizes the expenditure components of SAP-related projects and whether these are competitively procured:

Expenditure Component	Competitively Procured?
SAP Software	**No**
SAP Contractors	**Yes, via RFSQ/RFQ**
System Integrators (if used)	**Yes, via RFP**

4.0 A. BACKGROUND

Reference: SAP AS THE DEFAULT ERP SOLUTION (2008-2009)
Exhibit B-3, Section 2.2, pp. 8-9
SAP as the default ERP solution

BC Hydro states on pages 8-9 of the Consolidated Information Filing:

The SAP Strategy recommended that when a business requirement arises, the SAP alternative will be examined to confirm whether the business need can be appropriately satisfied with SAP. If SAP does not meet the business need, a bolt-on solution would be considered…

…The choice of SAP as a default solution did not approve the implementation of SAP for any project initiatives. Rather, the decision meant that SAP would be evaluated on a project-by-project basis, and selected when it meets business needs. [emphasis added]

1.4.4 Was a competitive tendering process used for all/most SAP-related project choices?

1.4.4.1 If no, please explain how BC Hydro ensured/verified the competitiveness of project costs.

RESPONSE:

As indicated in BC Hydro's response to BCUC IR 1.4.4, BC Hydro did not rely on competitive tendering for SAP software acquisition. Instead, BC Hydro ensured/verified the competitiveness of the costs by leveraging its prior experiences with ERP software licensing costs (i.e., SAP, Oracle PeopleSoft, Ventyx PassPort), understanding its comparative "Best of Breed" ERP licensing costs, informal external validations, and engaging in direct negotiations with SAP to establish favourable discounts.

4.0 A. BACKGROUND

Reference: SAP AS THE DEFAULT ERP SOLUTION (2008-2009)
Exhibit B-3, Section 2.2, pp. 8-9
SAP as the default ERP solution

BC Hydro states on pages 8-9 of the Consolidated Information Filing:

The SAP Strategy recommended that when a business requirement arises, the SAP alternative will be examined to confirm whether the business need can be appropriately satisfied with SAP. If SAP does not meet the business need, a bolt-on solution would be considered…

…The choice of SAP as a default solution did not approve the implementation of SAP for any project initiatives. Rather, the decision meant that SAP would be evaluated on a project-by-project basis, and selected when it meets business needs. [emphasis added]

1.4.4 Was a competitive tendering process used for all/most SAP-related project choices?

1.4.4.2 If yes, please indicate which projects underwent a competitive tendering process and how many vendors responded to each of the competitive tendering processes.

RESPONSE:

BC Hydro does not use competitive tendering for technology choices. The expenditure components of SAP-related projects that are competitively procured are noted in BC Hydro's response to BCUC IR 1.4.4.

4.0 A. BACKGROUND

Reference: SAP AS THE DEFAULT ERP SOLUTION (2008-2009)
Exhibit B-3, Section 2.2, pp. 8-9
SAP as the default ERP solution

BC Hydro states on pages 8-9 of the Consolidated Information Filing:

The SAP Strategy recommended that when a business requirement arises, the SAP alternative will be examined to confirm whether the business need can be appropriately satisfied with SAP. If SAP does not meet the business need, a bolt-on solution would be considered…

…The choice of SAP as a default solution did not approve the implementation of SAP for any project initiatives. Rather, the decision meant that SAP would be evaluated on a project-by-project basis, and selected when it meets business needs. [emphasis added]

1.4.5 Please compare and contrast BC Hydro's current policy and practice for identifying information technology options and their alternatives to BC Hydro's policy and practice in 2008 when SAP was identified as the "default solution".

RESPONSE:

BC Hydro's current approach is similar to the approach adopted in 2008, although there is now a more formalized process and additional rigour applied during the early stages of a project (i.e., during Identification phase).

As explained in BC Hydro's response to BCUC IR 1.4.3, BC Hydro has established a number of technology standards (e.g., SAP, IBM FileNet, GE Smallworld, TIBCO ESB, Microsoft Sharepoint), and it seeks to leverage these standards whenever projects are delivered in the applicable domain. This approach is intended to simplify the IT environment over time, contain application proliferation and duplication, and ensure that BC Hydro gets sufficient use and value out of its technology assets.

For ERP-related projects, BC Hydro continues to consider SAP as the "default ERP solution" unless it discovers during the Identification phase of the project that SAP provides a poor fit to meet business needs.

The current approach is more rigorous than 2008 practices, as BC Hydro has strengthened its processes to formalize requirements and to consider and establish the architectural direction for a project during the Identification phase. This is now done via a deliverable called the Architecture Vision, which validates the technology selection for the project (for all medium to complex projects) and

in most cases (unless there is poor fit, or a need for an exception to a technology standard), the applicable technology standards are confirmed for use.

Subsequently, during Definition phase, an Architecture Definition Document (ADD) captures the high level design details associated with the functionality and deployment of the selected technology asset.

4.0 A. BACKGROUND

Reference: SAP AS THE DEFAULT ERP SOLUTION (2008-2009)
Exhibit B-3, Section 2.2, pp. 8-9
SAP as the default ERP solution

BC Hydro states on pages 8-9 of the Consolidated Information Filing:

The SAP Strategy recommended that when a business requirement arises, the SAP alternative will be examined to confirm whether the business need can be appropriately satisfied with SAP. If SAP does not meet the business need, a bolt-on solution would be considered…

…The choice of SAP as a default solution did not approve the implementation of SAP for any project initiatives. Rather, the decision meant that SAP would be evaluated on a project-by-project basis, and selected when it meets business needs. [emphasis added]

1.4.5 Please compare and contrast BC Hydro's current policy and practice for identifying information technology options and their alternatives to BC Hydro's policy and practice in 2008 when SAP was identified as the "default solution".

1.4.5.1 Please describe BC Hydro's validation process for identifying technology options and alternatives. If BC Hydro does not have a validation process, please explain why not.

RESPONSE:

Please refer to BC Hydro's response to BCUC IR 1.4.5. For additional clarity, the technology validation process occurs during the Identification and Definition phases of the project via the Architecture Vision and Architecture Design Document deliverables. These ITDSP steps ensure that the technology selections are appropriate.

4.0 A. BACKGROUND

Reference: SAP AS THE DEFAULT ERP SOLUTION (2008-2009)
Exhibit B-3, Section 2.2, pp. 8-9
SAP as the default ERP solution

BC Hydro states on pages 8-9 of the Consolidated Information Filing:

The SAP Strategy recommended that when a business requirement arises, the SAP alternative will be examined to confirm whether the business need can be appropriately satisfied with SAP. If SAP does not meet the business need, a bolt-on solution would be considered…

…The choice of SAP as a default solution did not approve the implementation of SAP for any project initiatives. Rather, the decision meant that SAP would be evaluated on a project-by-project basis, and selected when it meets business needs. [emphasis added]

1.4.5 Please compare and contrast BC Hydro's current policy and practice for identifying information technology options and their alternatives to BC Hydro's policy and practice in 2008 when SAP was identified as the "default solution".

1.4.5.2 Are all information technology options and alternatives given the same level of scrutiny and analysis? Please explain why or why not.

RESPONSE:

Please refer to BC Hydro's response to BCUC IR 1.4.5.

For additional clarity, BC Hydro does not apply the same level of scrutiny and analysis to all information technology options. Instead, BC Hydro seeks to leverage its default technology standards (SAP for ERP, FileNet for ECM, TIBCO for integration, etc.). This approach is intended to simplify the IT environment over time, contain application proliferation and duplication, and ensure that BC Hydro gets sufficient use and value out of its technology assets.

4.0 A. BACKGROUND

Reference: SAP AS THE DEFAULT ERP SOLUTION (2008-2009)
Exhibit B-3, Section 2.2, pp. 8-9
SAP as the default ERP solution

BC Hydro states on pages 8-9 of the Consolidated Information Filing:

The SAP Strategy recommended that when a business requirement arises, the SAP alternative will be examined to confirm whether the business need can be appropriately satisfied with SAP. If SAP does not meet the business need, a bolt-on solution would be considered…

…The choice of SAP as a default solution did not approve the implementation of SAP for any project initiatives. Rather, the decision meant that SAP would be evaluated on a project-by-project basis, and selected when it meets business needs. [emphasis added]

1.4.5 Please compare and contrast BC Hydro's current policy and practice for identifying information technology options and their alternatives to BC Hydro's policy and practice in 2008 when SAP was identified as the "default solution".

1.4.5.3 Has BC Hydro's competitive tendering processes changed since 2008/2009 related to IT expenditures? If so, please explain.

RESPONSE:

Please refer to BC Hydro's responses to BCUC IR 1.4.4 and 1.4.5 for explanations of how technology options are identified and selected, and how SAP software is acquired.

BC Hydro notes that competitive tendering is not used as a mechanism for identifying technology options and alternatives when BC Hydro already has an established technology standard (e.g., SAP for ERP, FileNet for ECM). This approach has not changed substantively since 2008/2009.

BC Hydro also notes that competitive tendering is used in other technology areas (e.g. IT services, commodity products, software for emerging domains, or to assist with technology choices in areas where BC Hydro does not have a technology standard), and involves standard BC public sector tendering procedures including the use of "BC Bid" for posting opportunities, and has not changed substantially since 2008/2009.

In regards to tendering for IT services specifically, and as also indicated in BC Hydro's response to BCUC 1.4.4, BC Hydro confirms that competitive tendering is typically used for SAP project implementation services (i.e. RFSQs/RFQs for SAP contractors and RFPs for system integrators, as applicable).

5.0 B. SAP-RELATED EXPENDITURES

Reference: SAP-RELATED EXPENDITURES
Exhibit A2-2, BC Hydro Response to Adrian Dix Complaint dated January 8, 2016: covering letter, p. 10; Tab B SAP-related spending

BC Hydro states the following on page 10 of the January 8, 2016 covering letter filed in response to the Adrian Dix complaint (Exhibit A2-2):

BC Hydro has spent $142 million in capital and operating dollars on SAP-related projects in the years ending December 31, 2015. The resulting systems have served BC Hydro well and BC Hydro sees no reason to deviate from the strategy of using SAP as our default option as other systems are updated in the future.

1.5.1 Please describe the assessment measures used by BC Hydro to qualitatively and quantitatively reach the conclusion that "the resulting systems have served BC Hydro well."

RESPONSE:

Please refer to section 5 of the Consolidated Information Filing for an overview of how the SAP investments have successfully contributed to BC Hydro's IT&T goals (section 5.1), as well as a summary of key successes (section 5.2). These elements lead BC Hydro to conclude that it has been well served by its SAP investments.

In addition, BC Hydro notes the following in regards to its SAP systems:

1. **Effective Support for BC Hydro's External Customers and Internal Business Groups - the SAP systems host many of BC Hydro's most critical and highest volume business functions, and these operate reliably every day as needed to effectively conduct utility business. (e.g., commercial and residential customer billing and revenue collection, meter management, call centre records, financial transactions, vendor payment transactions, payroll transactions, time entry transactions, project management functions, all environment and safety incidents, etc.).**

2. **IT Operational Reliability – BC Hydro manages and measures its technology systems based on the ITIL framework (i.e., Information Technology Infrastructure Library, which is a set of standardized practices for IT service management) framework. Metrics such as the number of High Severity incidents, Restoration Times, incident Response Times, System Availability,**

etc. are tracked. Based on these measures, BC Hydro consistently achieves very reliable technical performance from its SAP systems.

3. **ERP Operating Budgets have been successfully managed and the operating costs for ERP have been stable – Despite a greater functional capability compared to the legacy ERP environments the operating costs have been relatively consistent between F2009 and F2016 after adjusting for inflation. Please also refer to BC Hydro's response to BCUC IRs 1.13.1 and 1.13.2 for additional details.**

4. **Project and Program Successes – As defined and reported in Table 9 of the Consolidated Information Filing, BC Hydro has achieved "successful project outcomes" in the great majority of its SAP-related projects. ERP projects are often very complex since they involve business process change as well as complex technology, but BC Hydro is achieving success in most of its initiatives.**

5.0 B. SAP-RELATED EXPENDITURES

Reference: SAP-RELATED EXPENDITURES
Exhibit A2-2, BC Hydro Response to Adrian Dix Complaint dated January 8, 2016: covering letter, p. 10; Tab B SAP-related spending

Tab B of Exhibit A2-2 contains the Expenditure Authorization Request (EAR) for the "Financial Systems Replacement Project: Implementation Phase" dated July 13, 2009 and the Business Case for the FSR Project (Implementation Phase) dated June 2009.

1.5.2 With reference to the Enterprise Financials Upgrade project (formerly named the FSR project), please explain how proceeding with SAP as the chosen option as opposed to upgrading PeopleSoft has achieved the business outcomes cited in the project's EARs and business cases.

RESPONSE:

Please refer to Appendix A (p. 29) of the Consolidated Information Filing for a description of the Financial Systems Replacement (FSR) project (formerly called the Enterprise Financials Upgrade project), which includes a summary of BC Hydro's analysis of two alternatives: upgrade the existing PeopleSoft Financial system, or implement SAP Financials. Section 5.2 (page 59, line 24 to page 60, line 5) of the Consolidated Information Filing also provides a summary of the key business outcomes achieved by the implementation of SAP Financials.

BC Hydro's original preferred alternative (in 2007, and as reported in the F2009/F2010 RRA Appendix J, page 89 (please refer to Attachment 28 to the Consolidated Information Filing)) to proceed with an upgrade of the PeopleSoft Financial system was changed (in 2008) in favour of SAP Financials for three primary reasons:

a) subsequent to the 2007 recommendation, new requirements emerged related to reporting in accordance with IFRS and the BCUC Uniform System of Accounts (USoA),

b) in May 2008 BC Hydro chose a single ERP strategy over the previous 'best of breed' strategy, with SAP as the default technology standard. Since financials are a core business system, upgrading PeopleSoft would have precluded ERP standardization and committed BC Hydro to an ongoing reliance on "best of breed" systems and interfaces.

c) detailed blueprinting analysis of the SAP Financials alternative determined that the original analysis significantly overestimated the cost and timeframe of the SAP Financials option (the original 2007 recommendation estimated that SAP Financials would cost $30-40 million and take 2-3 years to implement, whereas the blueprinting completed in 2009 estimated that SAP Financials would cost $17 million and take 18 months to implement).

For these reasons, the original PeopleSoft upgrade recommendation was reconsidered, and in July 2009 BC Hydro decided to implement SAP Financials.

The business outcomes cited in the FSR project Implementation phase business case (i.e., SAP Financials) are summarized as:

a) Deliver IFRS and BCUC USoA reporting requirements. The SAP Financials project achieved this, while the PeopleSoft project did not include this.

b) Remedy technical obsolescence of the financials ERP system (i.e., since existing PeopleSoft system version was no longer supported). Both the SAP Financials and PeopleSoft upgrade project would have achieved this.

c) The SAP Financials project was aligned with the IT&T strategy to consolidate ERPs, while the PeopleSoft project did not make such a contribution.

d) Process improvements and simplification. The SAP Financials project facilitated additional business improvements in regards to financial processes (e.g., extent of accounting model changes, improved controls) and integration benefits with other business functions (e.g., data standardization generally, common customer list for both energy and sundry billing). The PeopleSoft project included some limited improvements but was unable to deliver integrated system benefits.

e) Cost effectiveness. The SAP Financials system contributed to a cost–effective solution to BC Hydro over the long term, with finance process and ERP support costs being contained (please also refer to BC Hydro's responses to BCUC IR 1.13.1 and BCUC IR 1.13.2). It is BC Hydro's view that continuing to use multiple ERPs (including continuing with PeopleSoft for Financials) would have been more costly over the long term given the technical and business complexities, but acknowledges that there is no way to objectively measure this.

6.0 B. SAP-RELATED EXPENDITURES

Reference: SAP-RELATED EXPENDITURES
Exhibit B-3: Section 2.2, p. 10; Section 3.1.1, Table 2, pp. 16-20
Actual SAP-related project initiative expenditures – F2009-F2016

BC Hydro utilizes the following terms to describe the project status of the projects listed in Table 2 of the Consolidated Information Filing: (i) Closed; (ii) In Progress; (iii) In-Service; and (iv) Deferred.

1.6.1 Please define the term “Closed” as it pertains to a project’s status.

RESPONSE:

The ‘Closed’ project status refers to a completed project. The project status is set to ‘Closed’ in SAP after project deliverables are completed and accepted by the Project Sponsor and Project Initiator, and the applicable project close-out requirements are met; for example, any outstanding Gating Review conditions are closed, and an approved Project Completion and Evaluation report has been issued.

6.0 B. SAP-RELATED EXPENDITURES

Reference: SAP-RELATED EXPENDITURES
Exhibit B-3: Section 2.2, p. 10; Section 3.1.1, Table 2, pp. 16-20
Actual SAP-related project initiative expenditures – F2009-F2016

BC Hydro utilizes the following terms to describe the project status of the projects listed in Table 2 of the Consolidated Information Filing: (i) Closed; (ii) In Progress; (iii) In-Service; and (iv) Deferred.

1.6.2 Please explain why none of the projects listed in Table 2 are classified as "Completed" and how the project status "Completed" differs from "Closed", if at all.

RESPONSE:

The projects identified as 'Closed' in Table 2 are completed projects. The project statuses of 'Closed' and 'Completed' have the same meaning in the context of BC Hydro's Consolidated Information Filing.

6.0 B. SAP-RELATED EXPENDITURES

Reference: SAP-RELATED EXPENDITURES
Exhibit B-3: Section 2.2, p. 10; Section 3.1.1, Table 2, pp. 16-20
Actual SAP-related project initiative expenditures – F2009-F2016

BC Hydro utilizes the following terms to describe the project status of the projects listed in Table 2 of the Consolidated Information Filing: (i) Closed; (ii) In Progress; (iii) In-Service; and (iv) Deferred.

1.6.3 Please explain the meaning of the project status "In-Service" and explain how this project status differs from "Closed" and from "Completed".

RESPONSE:

The project status of 'In-Service' is when the project is substantially complete and the assets are available for their intended use. Once a project is placed 'In-Service', costs flow through to the SAP assets and start to depreciate. Before a project status is changed to 'In-Service', the project must meet the outstanding gate conditions, and the request must be approved by the Project Manager and reviewed by the Technology PMO.

While the project is 'In-Service', it can still accept trailing costs during the project close-out period. However, once a project status is set to 'Closed' the project can no longer accept costs. The project statuses of 'Closed' and 'Completed' have the same meaning in the context of the Consolidated Information Filing.

Please refer to BC Hydro's response to BCUC IR 1.6.1 for the definition of the project status 'Closed'.

6.0 B. SAP-RELATED EXPENDITURES

Reference: SAP-RELATED EXPENDITURES
Exhibit B-3: Section 2.2, p. 10; Section 3.1.1, Table 2, pp. 16-20
Actual SAP-related project initiative expenditures – F2009-F2016

BC Hydro states on page 10 of the Consolidated Information Filing that it had a "large and robust SAP foundation to build upon since the Customer functionality (Industry Solution for Utilities – Customer Care and Services or IS-U-CCS) was in place and up-to-date, having undergone a successful implementation in 2003 and subsequent technical upgrade in 2007."

1.6.4 Please confirm, or explain otherwise, that the implementation of the SAP Customer Care system in 2003 was the first instance of SAP expenditures incurred by BC Hydro.

RESPONSE:

Confirmed. The SAP Customer Care system went live in December 2003. The project to implement the system began approximately three years earlier, with the majority of the implementation expenditures being incurred in 2002 and 2003.

6.0 B. SAP-RELATED EXPENDITURES

Reference: SAP-RELATED EXPENDITURES
Exhibit B-3: Section 2.2, p. 10; Section 3.1.1, Table 2, pp. 16-20
Actual SAP-related project initiative expenditures – F2009-F2016

BC Hydro states on page 10 of the Consolidated Information Filing that it had a "large and robust SAP foundation to build upon since the Customer functionality (Industry Solution for Utilities – Customer Care and Services or IS-U-CCS) was in place and up-to-date, having undergone a successful implementation in 2003 and subsequent technical upgrade in 2007."

1.6.4 Please confirm, or explain otherwise, that the implementation of the SAP Customer Care system in 2003 was the first instance of SAP expenditures incurred by BC Hydro.

1.6.4.1 If not confirmed, please provide a list of the other SAP systems software/hardware expenditures incurred by BC Hydro prior to the implementation of SAP Customer Care. Please provide the following information for each SAP-related expenditure: (i) name and description; (ii) year of implementation; and (iii) total capital and operating expenditures.

RESPONSE:

Given BC Hydro's response to BCUC IR 1.6.4, this question is not applicable.

6.0 B. SAP-RELATED EXPENDITURES

Reference: SAP-RELATED EXPENDITURES
Exhibit B-3: Section 2.2, p. 10; Section 3.1.1, Table 2, pp. 16-20
Actual SAP-related project initiative expenditures – F2009-F2016

BC Hydro states on page 10 of the Consolidated Information Filing that it had a "large and robust SAP foundation to build upon since the Customer functionality (Industry Solution for Utilities – Customer Care and Services or IS-U-CCS) was in place and up-to-date, having undergone a successful implementation in 2003 and subsequent technical upgrade in 2007."

1.6.5 Please expand Table 2 to include all SAP-related projects prior to F2009, including the SAP Customer Care and Services system which was implemented in 2003 and subsequently upgraded in 2007.

RESPONSE:

The new table below provides the approximate costs of SAP-related projects prior to F2009 (i.e., prior to the adoption of SAP as the default solution for ERP applications). The information is considered approximate because there are limited records available given the length of time that has elapsed.

The table includes the costs for Project Northstar (the replacement for BC Hydro's legacy Customer Information System which was over 30 years old). The expenditures are for the period up to F2008.

For context to the expenditures reported in the table below, BC Hydro notes that non-SAP ERP-related project expenditures (PeopleSoft, PassPort, JD Edwards, Oracle, etc.) prior to F2009 are estimated to be in the range of $150 million to $200 million since the 1990s.

SAP-related project expenditures prior to fiscal 2009
(i.e., prior to the adoption of SAP as the default solution for ERP applications)

Project	Category	Capital ($000)	Initiative Operating ($000)	Total ($000)	Project Status
1. NorthStar (SAP CCS)	Customer	45,208.0	17,200.0	62,408.0	Closed
2. Interim Rate Increase Solution	Customer	417.3	285.6	702.9	Closed
3. SAP-Rate Rollback	Customer	733.2	30.0	763.2	Closed
4. SAP Bill Print Assessment	Customer	-	52.1	52.1	Closed
5. SAP Sales & Distribution	Customer	544.5		544.5	Closed
6. Electric Meter Record System & Payment Funnel	Customer	2,489.4		2,489.4	Closed
7. Bill Print & Customer Information System Decommissioning	Customer	1,506.9	198.9	1705.8	Closed
8. SAP Data Archiving Phase 1	Customer	347.1		347.1	Closed
9. SAP Data Archiving Phase 2	Customer	352.7	-	352.7	Closed
10. SAP 6.0 Upgrade	Customer	4,261.2	360.9	4,622.1	Closed
11. Rate Design Initiative	Customer	-	469.8	469.8	Closed
12. Tax Proration	Customer	13.5		13.5	Closed
13. Conservation Research Initiative	Customer	5.0	142.0	147.0	Closed
Total		55.878.8	18,739.3	74,618.10	

7.0 B. SAP-RELATED EXPENDITURES

Reference: SAP-RELATED EXPENDITURES
Exhibit B-3, Section 3.1.1, Table 2, pp. 16-20
SAP-related project expenditures

1.7.1 Please identify which, if any, of the capital expenditures listed in Table 2 would be considered recurring expenditures. For instance, please confirm or explain otherwise that the "SAP Enhancements Pack Upgrade" line items are recurring expenditures.

RESPONSE:

SAP Environment Upgrades are performed every year or every second year. The environment upgrades may include Enhancement pack upgrade, Support pack, database, operations system depending on the versions released by the vendor and BC Hydro's current initiatives that may have requirement for certain features that come in the new versions.

In addition, every year we expect functionality and reporting improvements to be implemented for each SAP solution based on the current business needs. To facilitate this, work programs are implemented every year for each solution (Finance, Customer Care, PPM, etc).

Table 2 Recurring Expenditures

Project	Category	Capital ($000)	Initiative Operating ($000)	Total ($000)	Project Status
5. SAP NetWeaver Technical Enhancements	Platform	1,149.0	97.0	1,246.0	Closed
6. SAP Enhancements Pack 7 Upgrade	Platform	1,098.0	-	1,098.0	Closed
7. SAP Enhancements Pack 6 Upgrade	Platform	872.0	-	872.0	Closed
12. SAP Environment Upgrade	Platform	225.0	26.0	251.0	Closed
15. F16 SAP Upgrade	Platform	508.0	-	508.0	In-Service
18. SAP Customer Care System (CCS) Enhancements F15	Customer	277.0	-	277.0	Closed
23. Credit Collections Enhancements F14	Customer	200.0	11.0	211.0	Closed
25. SAP CCS Enhancements Work Program F16	Customer	179.0	-	179.0	In Progress

Project	Category	Capital ($000)	Initiative Operating ($000)	Total ($000)	Project Status
29. SAP Financial Reporting Enhancements F13	Financial	1,046.0	385.0	1,431.0	Closed
30. SAP Financials - Reporting Enhancements F11/F12	Financial	1,044.0	-	1,044.0	Closed
32. Financial Reporting Enhancements F15/F16	Financial	255.0	-	255.0	In Progress
36. SAP Finance Enhancements F15	Financial	22.0	-	22.0	In Service
39. SAP Finance Enhancements F16 Work Program	Financial	331.0	-	331.0	In Progress
46. Human Capital Management Enhancements F15	Human Resources	442.0	-	442.0	In Service
47. SAP HCM System F13 Enhancements	Human Resources	300.0	-	300.0	Closed
48. Qualification and Learning Management System (QLMS) Enhancements Work Program - F15/F16	Human Resources	193.0	-	193.0	In-Service
50. Human Capital Management Enhancements F14	Human Resources	39.0	7.0	46.0	Closed
51. eRecruitment Enhancements Work Program F15	Human Resources	162.0	-	162.0	In-Service
52. HR Enhancements F16	Human Resources	419.0	-	419.0	In Progress
56. PPM Enhancements F13	Project & Portfolio Management	349.0	-	349.0	Closed
57. PPM Enhancements F14	Project & Portfolio Management	276.0	-	276.0	Closed
58. SAP PPM Enhancements F15	Project & Portfolio Management	265.0	-	265.0	Closed
60. SAP PPM Enhancements Work Program F16	Project & Portfolio Management	434.0	-	434.0	In Progress
65. SAP Master Data Governance (MDG) Enhancements Work Program F16	Supply Chain	418.0	45.0	463.0	In-Progress
67. Distribution Work Scheduling (DWS) Enhancement Work Program	Work and Asset Management	998.0	75.0	1,073.0	In Progress

8.0 B. SAP-RELATED EXPENDITURES

Reference: SAP-RELATED EXPENDITURES
Exhibit B-3: Section 3.1.1, Table 2, p. 17; Section 4.6, Table 9, p. 50;
Exhibit A2-5, BCUC IR 3.5, Attachment 1, p. 10
Enterprise billing infrastructure (formerly: Customer Billing) project

In response to BCUC IR 3.5, BC Hydro provided the following information for the Enterprise Billing Infrastructure project:

- Current Status as of December 31, 2015: In Progress
- Developmental Stage: IDN (assumed to mean "identification")
- F16 Actual Capital Expenditures $3,154,000
- F16 Actual Operating Expenditures: $842,000
- Forecast remaining capital expenditures if not completed: TBD
- Total Cumulative Authorized Cost per Business Case (Capital & OPEX): $4,629,000

Table 2 on page 17 of the Consolidated Information Filing shows a total project cost for the Enterprise Billing Infrastructure project as of the end of F2016 of $6,265,000 ($5,245,000 Capital and $1,020,000 Operating) and an "In Progress" project status.

BC Hydro states in Table 9 on page 50 regarding the Enterprise Billing Infrastructure project: "Actual amounts spent is less than total authorized amount per EAR revision that was approved in April 2016 for a total amount of $10.5 million."

1.8.1 Please confirm, or explain otherwise, that the F2016 total cost of $6,265,000 has exceeded the "Total Cumulative Authorized Cost per Business Case" per the original EAR.

RESPONSE:

Confirmed. Cumulative authorized expenditures at March 2016 for the Enterprise Billing Infrastructure Project (EBIP) reported in the April 8, 2016 BC Hydro response to BCUC IR 1.3.5 (Exhibit A2-5) were $4.6 million and included $0.4 million of Deferred Operating costs, which was separately funded by the PowerSmart Residential Behaviour Program. The table below outlines the costs incurred by expenditure category and the respective authorized amounts.

The additional $2 million in expenditures was authorized upon verbal executive approval, but prior to the final sign off of the Definition Phase EAR revision in April 2016. While verbal approval was received, the EAR was not ready to be signed as several dates were misaligned due to a lengthy presentation and

approval process. The EAR was updated to reflect the correct dates and was signed on April 13, 2016. Please refer to BC Hydro's response to BCUC IR 1.8.6.

As at March 2016			
Expenditure Category	**Total Authorized Expenditures ($000)**	**Total Actual Expenditures ($000)**	**Variance (Authorized vs. Actual) ($000)**
Capital & Initiative Operating	4,228.5	6,265.6	2,037.1
Deferred Expenditures – PowerSmart Residential Behaviour Program	400.0	400.0	-
Total	**4,628.5**	**6,665.6**	**2,037.1**

8.0 B. SAP-RELATED EXPENDITURES

Reference: SAP-RELATED EXPENDITURES
Exhibit B-3: Section 3.1.1, Table 2, p. 17; Section 4.6, Table 9, p. 50;
Exhibit A2-5, BCUC IR 3.5, Attachment 1, p. 10
Enterprise billing infrastructure (formerly: Customer Billing) project

In response to BCUC IR 3.5, BC Hydro provided the following information for the Enterprise Billing Infrastructure project:

- Current Status as of December 31, 2015: In Progress
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- F16 Actual Capital Expenditures $3,154,000
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Table 2 on page 17 of the Consolidated Information Filing shows a total project cost for the Enterprise Billing Infrastructure project as of the end of F2016 of $6,265,000 ($5,245,000 Capital and $1,020,000 Operating) and an "In Progress" project status.

BC Hydro states in Table 9 on page 50 regarding the Enterprise Billing Infrastructure project: "Actual amounts spent is less than total authorized amount per EAR revision that was approved in April 2016 for a total amount of $10.5 million."

1.8.2 What is the total budgeted cost for the project? What is the timeline for completion of this project?

RESPONSE:

The total forecasted capital and operating cost for the EBIP project is expected to be in the range of $15.1 million to $18.3 million. The expected completion date for the project is F2018.

8.0 B. SAP-RELATED EXPENDITURES

Reference: SAP-RELATED EXPENDITURES
Exhibit B-3: Section 3.1.1, Table 2, p. 17; Section 4.6, Table 9, p. 50;
Exhibit A2-5, BCUC IR 3.5, Attachment 1, p. 10
Enterprise billing infrastructure (formerly: Customer Billing) project

In response to BCUC IR 3.5, BC Hydro provided the following information for the Enterprise Billing Infrastructure project:

- Current Status as of December 31, 2015: In Progress
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- F16 Actual Capital Expenditures $3,154,000
- F16 Actual Operating Expenditures: $842,000
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Table 2 on page 17 of the Consolidated Information Filing shows a total project cost for the Enterprise Billing Infrastructure project as of the end of F2016 of $6,265,000 ($5,245,000 Capital and $1,020,000 Operating) and an "In Progress" project status.

BC Hydro states in Table 9 on page 50 regarding the Enterprise Billing Infrastructure project: "Actual amounts spent is less than total authorized amount per EAR revision that was approved in April 2016 for a total amount of $10.5 million."

1.8.3 What prompted the revision to the EAR to increase the authorized amount?

RESPONSE:

The EAR revision was prompted by the progression of the development phase of the project from the Identification phase to the Definition phase. EAR revisions are always required when a project progresses from one phase to the next to authorize the costs associated with the next phase. Please refer also to BC Hydro's response to BCUC IR 1.17.7.

8.0 B. SAP-RELATED EXPENDITURES

Reference: SAP-RELATED EXPENDITURES
Exhibit B-3: Section 3.1.1, Table 2, p. 17; Section 4.6, Table 9, p. 50;
Exhibit A2-5, BCUC IR 3.5, Attachment 1, p. 10
Enterprise billing infrastructure (formerly: Customer Billing) project

In response to BCUC IR 3.5, BC Hydro provided the following information for the Enterprise Billing Infrastructure project:

- Current Status as of December 31, 2015: In Progress
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- F16 Actual Capital Expenditures $3,154,000
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Table 2 on page 17 of the Consolidated Information Filing shows a total project cost for the Enterprise Billing Infrastructure project as of the end of F2016 of $6,265,000 ($5,245,000 Capital and $1,020,000 Operating) and an "In Progress" project status.

BC Hydro states in Table 9 on page 50 regarding the Enterprise Billing Infrastructure project: "Actual amounts spent is less than total authorized amount per EAR revision that was approved in April 2016 for a total amount of $10.5 million."

1.8.3 What prompted the revision to the EAR to increase the authorized amount?

1.8.3.1 Did the increased spending occur before or after the revised EAR was approved?

RESPONSE:

The increased spending occurred upon verbal executive approval but before the revised EAR was approved. Please refer to BC Hydro's responses to BCUC IR 1.8.1 and BCUC IR 1.8.6.

8.0 B. SAP-RELATED EXPENDITURES

Reference: SAP-RELATED EXPENDITURES
Exhibit B-3: Section 3.1.1, Table 2, p. 17; Section 4.6, Table 9, p. 50;
Exhibit A2-5, BCUC IR 3.5, Attachment 1, p. 10
Enterprise billing infrastructure (formerly: Customer Billing) project

In response to BCUC IR 3.5, BC Hydro provided the following information for the Enterprise Billing Infrastructure project:

- Current Status as of December 31, 2015: In Progress
- Developmental Stage: IDN (assumed to mean "identification")
- F16 Actual Capital Expenditures $3,154,000
- F16 Actual Operating Expenditures: $842,000
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- Total Cumulative Authorized Cost per Business Case (Capital & OPEX): $4,629,000

Table 2 on page 17 of the Consolidated Information Filing shows a total project cost for the Enterprise Billing Infrastructure project as of the end of F2016 of $6,265,000 ($5,245,000 Capital and $1,020,000 Operating) and an "In Progress" project status.

BC Hydro states in Table 9 on page 50 regarding the Enterprise Billing Infrastructure project: "Actual amounts spent is less than total authorized amount per EAR revision that was approved in April 2016 for a total amount of $10.5 million."

1.8.4 Please explain why this project was renamed from the Customer Billing project to the Enterprise Billing Infrastructure project.

RESPONSE:

The scope of this project includes two major components:

- **Enhancements to the residential and general service customer bills (paper, online and call centre view); and**

- **Necessary upgrades to the bill generating and delivery infrastructure, including three major component system upgrades.**

The name of the project was changed after the Identification phase to reflect the infrastructure component.

8.0 B. SAP-RELATED EXPENDITURES

Reference: SAP-RELATED EXPENDITURES
Exhibit B-3: Section 3.1.1, Table 2, p. 17; Section 4.6, Table 9, p. 50;
Exhibit A2-5, BCUC IR 3.5, Attachment 1, p. 10
Enterprise billing infrastructure (formerly: Customer Billing) project

In response to BCUC IR 3.5, BC Hydro provided the following information for the Enterprise Billing Infrastructure project:

- Current Status as of December 31, 2015: In Progress
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- F16 Actual Capital Expenditures $3,154,000
- F16 Actual Operating Expenditures: $842,000
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- Total Cumulative Authorized Cost per Business Case (Capital & OPEX): $4,629,000

Table 2 on page 17 of the Consolidated Information Filing shows a total project cost for the Enterprise Billing Infrastructure project as of the end of F2016 of $6,265,000 ($5,245,000 Capital and $1,020,000 Operating) and an "In Progress" project status.

BC Hydro states in Table 9 on page 50 regarding the Enterprise Billing Infrastructure project: "Actual amounts spent is less than total authorized amount per EAR revision that was approved in April 2016 for a total amount of $10.5 million."

1.8.5 Did BC Hydro incur any capital or operating expenditures under the project's original name?

RESPONSE:

Yes. All capital and operating expenditures under the original project name are included in the Table 2 figures for the total project costs.

8.0 B. SAP-RELATED EXPENDITURES

Reference: SAP-RELATED EXPENDITURES
Exhibit B-3: Section 3.1.1, Table 2, p. 17; Section 4.6, Table 9, p. 50;
Exhibit A2-5, BCUC IR 3.5, Attachment 1, p. 10
Enterprise billing infrastructure (formerly: Customer Billing) project

In response to BCUC IR 3.5, BC Hydro provided the following information for the Enterprise Billing Infrastructure project:

- Current Status as of December 31, 2015: In Progress
- Developmental Stage: IDN (assumed to mean "identification")
- F16 Actual Capital Expenditures $3,154,000
- F16 Actual Operating Expenditures: $842,000
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- Total Cumulative Authorized Cost per Business Case (Capital & OPEX): $4,629,000

Table 2 on page 17 of the Consolidated Information Filing shows a total project cost for the Enterprise Billing Infrastructure project as of the end of F2016 of $6,265,000 ($5,245,000 Capital and $1,020,000 Operating) and an "In Progress" project status.

BC Hydro states in Table 9 on page 50 regarding the Enterprise Billing Infrastructure project: "Actual amounts spent is less than total authorized amount per EAR revision that was approved in April 2016 for a total amount of $10.5 million."

1.8.5 Did BC Hydro incur any capital or operating expenditures under the project's original name?

1.8.5.1 If yes, please provide the capital and operating expenditures incurred and indicate whether or not these costs have been included as part of the costs provided in Table 2 of the Consolidated Information Filing.

RESPONSE:

Yes. The capital and operating expenditures for the Enterprise Billing Infrastructure project are shown in Table 2, in the amounts reported in the preamble above. Table 2 does not include the Deferred Operating Costs described in BC Hydro's response to BCUC IR 1.8.1.

8.0 B. SAP-RELATED EXPENDITURES

Reference: SAP-RELATED EXPENDITURES
Exhibit B-3: Section 3.1.1, Table 2, p. 17; Section 4.6, Table 9, p. 50;
Exhibit A2-5, BCUC IR 3.5, Attachment 1, p. 10
Enterprise billing infrastructure (formerly: Customer Billing) project

BC Hydro states in Table 9 on page 50: "The financial approval process followed on this project is under review and information will be filed with the Commission when our review is complete."

1.8.6 Please clarify the statement that "the financial approval process followed on this project is under review."

RESPONSE:

BC Hydro clarifies the statement above by noting that on the date of the filing of the Consolidated Information Filing, BC Hydro was aware that the project was reporting costs exceeding the approved Identification EAR; however, the reasons for this were not clear and were under review.

BC Hydro is now able to complete the record of Table 9 in respect of its review of the financial oversight and project delivery governance of the Enterprise billing infrastructure project:

- **The project has at all times been compliant with project delivery guidelines including ITDSP;**

- **In February 2016 the project reported costs that exceeded the approved Identification EAR amount by $218,000 due to an erroneous accrual. There was a payment and accrual of $240,000 for the same item both in February. The accrual was corrected in March 2016. Had the error been reversed in February there would have been a small underspend; and**

- **Executive Team approval for continuation of the project was provided on March 8, 2016, subject to a follow-up meeting with the CFO regarding the NPV analysis. The NPV review with the CFO was completed on March 15. While verbal approval was received, the EAR was not ready to be signed as several dates were now misaligned due to the lengthy presentation and approval process. The EAR was updated to reflect the correct dates and was signed on April 13, 2016.**

This information is included in the updated Table 9A that BC Hydro provides in response to BCUC IR 1.23.1.1.

8.0 B. SAP-RELATED EXPENDITURES

Reference: SAP-RELATED EXPENDITURES
Exhibit B-3: Section 3.1.1, Table 2, p. 17; Section 4.6, Table 9, p. 50;
Exhibit A2-5, BCUC IR 3.5, Attachment 1, p. 10
Enterprise billing infrastructure (formerly: Customer Billing) project

BC Hydro states in Table 9 on page 50: "The financial approval process followed on this project is under review and information will be filed with the Commission when our review is complete."

1.8.7 Please confirm, or explain otherwise, that BC Hydro has followed its financial policies and controls and its project delivery standards (i.e. ITDSP) in the planning and implementation of the Enterprise Billing Infrastructure project.

RESPONSE:

Please refer to BC Hydro's response to BCUC IR 1.8.6.

8.0 B. SAP-RELATED EXPENDITURES

Reference: SAP-RELATED EXPENDITURES
Exhibit B-3: Section 3.1.1, Table 2, p. 17; Section 4.6, Table 9, p. 50;
Exhibit A2-5, BCUC IR 3.5, Attachment 1, p. 10
Enterprise billing infrastructure (formerly: Customer Billing) project

BC Hydro states in Table 9 on page 50: "The financial approval process followed on this project is under review and information will be filed with the Commission when our review is complete."

1.8.8 Please clarify BC Hydro's statement in Table 9 that "information will be filed with the Commission when our review is complete." When does BC Hydro anticipate that this information will be filed with the Commission?

RESPONSE:

Please refer to BC Hydro's response to BCUC IR 1.8.6, which provides the information.

9.0 B. SAP-RELATED EXPENDITURES

Reference: SAP-RELATED EXPENDITURES
Exhibit B-3, Section 3.4, pp. 23-28
Transformation initiative

BC Hydro states on page 24 of the Consolidated Information Filing:

BC Hydro undertook considerable blueprint work to gain sufficient understanding of the required changes to business process, the human resource impacts, the technical complexity, and the total cost estimate of the full Transformation Initiative. At the time that design work was being developed, the expectation was that BC Hydro would implement these projects, in SAP, over a relatively short timeframe…

…Following this comprehensive assessment, BC Hydro made a decision in late 2013 not to roll out the technology as part of one large project, but rather, to phase the rollout in a series of manageable steps over a number of years.

1.9.1 Please provide the blueprint and design phase EAR(s) for the Transformation Initiative project.

RESPONSE:

Please refer to BC Hydro's response to DIX IR 1.16 for copies of the blueprint and design phase EARs for the Transformation Initiative technology projects, as listed below:

Work Management Foundational Technology	**Attachment 174 (Revision 0)** **Attachment 175 (Revision 1)** **Attachment 176 (Revision 2)**
Schedule Dispatch & Mobility	**Attachment 169 (Revision 0)** **Attachment 170 (Revision 1)**
Customer Connections Foundational Technology	**Attachment 178 (Revision 0)** **Attachment 179 (Revision 1)** **Attachment 180 (Revision 2)**
Asset Management Foundational Technology	**Attachment 172 (Revision 0)** **Attachment 173 (Revision 1)**
Supply Chain Management	**Attachment 138 (Revision 0)** **Attachment 139 (Revision 1)** **Attachment 140 (Revision 2)** **Attachment 141 (Revision 3)**

9.0 B. SAP-RELATED EXPENDITURES

Reference: SAP-RELATED EXPENDITURES
Exhibit B-3, Section 3.4, pp. 23-28
Transformation initiative

BC Hydro states on page 24 of the Consolidated Information Filing:

BC Hydro undertook considerable blueprint work to gain sufficient understanding of the required changes to business process, the human resource impacts, the technical complexity, and the total cost estimate of the full Transformation Initiative. At the time that design work was being developed, the expectation was that BC Hydro would implement these projects, in SAP, over a relatively short timeframe…

…Following this comprehensive assessment, BC Hydro made a decision in late 2013 not to roll out the technology as part of one large project, but rather, to phase the rollout in a series of manageable steps over a number of years.

1.9.1 Please provide the blueprint and design phase EAR(s) for the Transformation Initiative project.

1.9.1.1 At the time the decision was made in late 2013 not to roll out the technology as part of one large project, what was the total authorized cost for this project?

RESPONSE:

At the end of September 2013 the sum of the authorized cost for the five Transformation Initiative technology projects equalled $24.6 million (i.e., the total of the approved amounts in the five project EARs).

9.0 B. SAP-RELATED EXPENDITURES

Reference: SAP-RELATED EXPENDITURES
Exhibit B-3, Section 3.4, pp. 23-28
Transformation initiative

BC Hydro states on page 24 of the Consolidated Information Filing:

BC Hydro undertook considerable blueprint work to gain sufficient understanding of the required changes to business process, the human resource impacts, the technical complexity, and the total cost estimate of the full Transformation Initiative. At the time that design work was being developed, the expectation was that BC Hydro would implement these projects, in SAP, over a relatively short timeframe…

…Following this comprehensive assessment, BC Hydro made a decision in late 2013 not to roll out the technology as part of one large project, but rather, to phase the rollout in a series of manageable steps over a number of years.

1.9.2 Please provide the total cost incurred during the blueprint and design phases of the Transformation Initiative project.

RESPONSE:

As at March 31, 2014, the total cost incurred on the five Transformation Initiative technology projects during blueprint and design (Definition phase) was $33.1 million.

Please refer to the row labelled 'January 2014' in the table provided in BC Hydro's response to BCUC IR 1.9.3.

9.0 B. SAP-RELATED EXPENDITURES

Reference: SAP-RELATED EXPENDITURES
Exhibit B-3, Section 3.4, pp. 23-28
Transformation initiative

BC Hydro states on page 24 of the Consolidated Information Filing:

BC Hydro undertook considerable blueprint work to gain sufficient understanding of the required changes to business process, the human resource impacts, the technical complexity, and the total cost estimate of the full Transformation Initiative. At the time that design work was being developed, the expectation was that BC Hydro would implement these projects, in SAP, over a relatively short timeframe…

…Following this comprehensive assessment, BC Hydro made a decision in late 2013 not to roll out the technology as part of one large project, but rather, to phase the rollout in a series of manageable steps over a number of years.

1.9.2 Please provide the total cost incurred during the blueprint and design phases of the Transformation Initiative project.

1.9.2.1 At the time the decision was made in late 2013 not to roll out the technology as part of one large project, what was the total amount spent (operating and capital) on this project?

RESPONSE:

At the end of September 2013 the total amount spent on the five Transformation Initiative technology projects was $27.9 million. This amount exceeded the approved amount of $24.6 million at that time due to delays in the approval of the EARs.

9.0 B. SAP-RELATED EXPENDITURES

Reference: SAP-RELATED EXPENDITURES
Exhibit B-3, Section 3.4, pp. 23-28
Transformation initiative

BC Hydro states on page 24 of the Consolidated Information Filing:

BC Hydro undertook considerable blueprint work to gain sufficient understanding of the required changes to business process, the human resource impacts, the technical complexity, and the total cost estimate of the full Transformation Initiative. At the time that design work was being developed, the expectation was that BC Hydro would implement these projects, in SAP, over a relatively short timeframe…

…Following this comprehensive assessment, BC Hydro made a decision in late 2013 not to roll out the technology as part of one large project, but rather, to phase the rollout in a series of manageable steps over a number of years.

1.9.3 Please provide a step-by-step description of the approval process which BC Hydro underwent internally starting from the inception of the Transformation Initiative through the blueprint and design phases and through the decision in late 2013 not to roll out the technology as part of one large project.

RESPONSE:

Please refer to the table below. BC Hydro also includes in the shaded cells some context to the PSW project. Please also refer to BC Hydro's response to BCUC IR 1.10.1 for additional information regarding the PSW project and its relationship to the Transformation Initiative.

Date	Event	Description / Comment
July 2010	**BCTC amalgamated into BC Hydro**	**Transmission Corporation staff return to BC Hydro**
Summer 2010	**T&D business group created**	**Corporate re-organization includes the creation of the Transmission and Distribution business group**
August 2010	**T&D Transformation initiated**	**T&D Transformation Program was initiated**
April 2011	**Government Review of BC Hydro initiated (report filed June 2011)**	

Date	Event	Description / Comment
July 2011	**Supply Chain EAR approved**	**Supply Chain Management project EAR approved for $0.5 million for identification phase work**
May 2012	**PSW scope change**	**PSW scope decided to be incorporated into Transformation Initiative**
May 2012	**CWASD**	**Coordinated Work Allocation Scheduling and Dispatch (CWASD) work stream of PSW established as a separate work stream within Transformation**
June 2012	**Supply Chain EAR revision 1 and business case approved**	**Addition of $5.0 million, for a total approved amount of $5.5 million for definition phase work**
October 2012	**Work commences on four Transformation technology projects**	**Work Management Foundational Technology (WM), Schedule Dispatch & Mobility (SDM), Customer Connections Foundational Technology (CC), and Asset Management Foundational Technology (AM)**
November 2012	**Work Management Technical Readiness EAR & business case approved**	**$8.1 million approved for Work Management Technical Readiness project (name change from CWASD) to implement work allocation and scheduling solution.**
December 2012	**Work Management Technical Readiness go-live**	**Work allocation and scheduling solution implemented in production. Pilot begins for Nanaimo office.**

<table>
<tr><th>Date</th><th>Event</th><th>Description / Comment</th></tr>
<tr><td>February 2013</td><td>Initial EAR and business case approved for four projects;
EAR revision 2 approved for Supply Chain Management</td><td>Initial EAR and Business case for definition (blueprint) phase for: Work Management Foundational Technology, Schedule Dispatch & Mobility, Customer Connections Foundational Technology, and Asset Management Foundational Technology;
Additional funds for Supply Chain Management approved to continue definition (blueprint) phase work
<table>
<tr><th></th><th colspan="4">($ million)</th></tr>
<tr><th>Project</th><th>Previously approved)</th><th>Additions</th><th>Total approved</th><th>Actual costs</th></tr>
<tr><td>WM</td><td></td><td>3.2</td><td>3.2</td><td>0.4</td></tr>
<tr><td>SDM</td><td></td><td>5.0</td><td>5.0</td><td>0.9</td></tr>
<tr><td>CC</td><td></td><td>3.6</td><td>3.6</td><td>0.6</td></tr>
<tr><td>AM</td><td></td><td>3.1</td><td>3.1</td><td>0.6</td></tr>
<tr><td>SCM</td><td>5.5</td><td>4.2</td><td>9.7</td><td>6.3</td></tr>
<tr><td>Total</td><td>5.5</td><td>19.1</td><td>24.6</td><td>8.8</td></tr>
</table></td></tr>
<tr><td>January/ February 2013</td><td>Cost transfers</td><td>$4 million transferred from PSW to Work Management Technical Readiness and other Transformation technology projects.</td></tr>
<tr><td>May 2013</td><td>Work Management Technical Readiness completed</td><td>Decision not to roll out technical solution beyond pilot, and decision to close project</td></tr>
<tr><td>May 2013</td><td>EAR revisions prepared for five projects</td><td>EAR revisions prepared in consideration of additional cost estimates to complete definition (blueprint) phase for Work Management, Schedule Dispatch & Mobility, Customer Connections, and Asset Management, and Supply Chain Management projects (subsequently approved January 2014)</td></tr>
<tr><td>Sep 2013</td><td>Blueprint completed</td><td>Blueprint “playback” presented to business stakeholders; Implementation phase cost estimate developed for Transformation technology projects</td></tr>
</table>

<table>
<tr><th>Date</th><th>Event</th><th>Description / Comment</th></tr>
<tr><td>September 2013</td><td>Decision to phase technology rollout</td><td>The Executive team under advisement of the Technology Governance and Transformation Oversight Committees decides not to continue with large initiative as-is and instead rollout technology in series of phased projects. Costs at end of September are as follows:
<table>
<tr><td></td><td colspan="2">($ million)</td></tr>
<tr><td>Project</td><td>Total approved</td><td>Actual costs</td></tr>
<tr><td>WM</td><td>3.2</td><td>3.1</td></tr>
<tr><td>SDM</td><td>5.0</td><td>4.3</td></tr>
<tr><td>CC</td><td>3.6</td><td>3.3</td></tr>
<tr><td>AM</td><td>3.1</td><td>3.2</td></tr>
<tr><td>SCM</td><td>9.7</td><td>14.0</td></tr>
<tr><td>Total</td><td>24.6</td><td>27.9</td></tr>
</table>
The total actual costs exceeded the total approved amount due to delays in the approval of the EARs.</td></tr>
</table>

<table>
<tr><th>Date</th><th>Event</th><th>Description / Comment</th></tr>
<tr><td>January 2014</td><td>EAR revisions approved for five projects</td><td>
EAR revisions approved to account for expected costs of definition (blueprint)
<table>
<tr><td></td><td colspan="4">($ million)</td></tr>
<tr><td>Project</td><td>Previously approved</td><td>Additions</td><td>Total approved</td><td>Actual costs</td></tr>
<tr><td>WM</td><td>3.2</td><td>0.7</td><td>4.0</td><td>3.7</td></tr>
<tr><td>SDM</td><td>5.0</td><td>1.2</td><td>6.1</td><td>6.0</td></tr>
<tr><td>CC</td><td>3.6</td><td>0.9</td><td>4.5</td><td>4.3</td></tr>
<tr><td>AM</td><td>3.1</td><td>0.7</td><td>3.8</td><td>3.7</td></tr>
<tr><td>SCM</td><td>9.7</td><td>4.5</td><td>14.2</td><td>16.4</td></tr>
<tr><td>Total</td><td>24.6</td><td>8.0</td><td>32.6</td><td>34.2</td></tr>
</table>
Following the decision to not continue with the Transformation Initiative, there were further costs attributed to the individual projects. The actual amounts reported in this table differ from the amounts in the table in the ‘September 2013’ row due to: 1) a delay between September and January in transferring costs related to the Transformation Initiative to the respective projects and 2) because work continued in anticipation of specific implementation projects proceeding (e.g. Supply Chain Solutions, Distribution Work Scheduling, etc.)

As at March 31, 2014 the total expenditures for the five Transformation Blueprint IT projects were approximately $33.1 million ($1.1 million lower than the $34.2 million reported above). This difference is explained by a final reconciliation of the cost transfers noted above. Some costs incurred on the projects were attributed to the subsequent supply chain projects, and the Graphic Work Design and the Distribution Work Scheduling projects.
</td></tr>
</table>

Date	Event	Description / Comment
Various Dates	**Project Closed, or Deferred**	**Asset Management Foundational Technology – Closed in March 2014** **Work Management Foundation Technology – Closed in August 2014** **Customer Connections Foundational Technology – Closed in August 2014** **Supply Chain Management – Deferred in May 2014** **Schedule Dispatch Mobility– Deferred in August 2015**

9.0 B. SAP-RELATED EXPENDITURES

Reference: SAP-RELATED EXPENDITURES
Exhibit B-3, Section 3.4, pp. 23-28
Transformation initiative

BC Hydro states on page 24 of the Consolidated Information Filing:

BC Hydro undertook considerable blueprint work to gain sufficient understanding of the required changes to business process, the human resource impacts, the technical complexity, and the total cost estimate of the full Transformation Initiative. At the time that design work was being developed, the expectation was that BC Hydro would implement these projects, in SAP, over a relatively short timeframe…

…Following this comprehensive assessment, BC Hydro made a decision in late 2013 not to roll out the technology as part of one large project, but rather, to phase the rollout in a series of manageable steps over a number of years.

1.9.4 Please explain whether, during the blueprint and design phase of the Transformation Initiative project, BC Hydro considered notifying the Commission of this planned large project and why BC Hydro ultimately determined not to notify the Commission of this initiative.

RESPONSE:

As discussed in BC Hydro's response to BCOAPO IR 1.9.1 the SAP-related technology projects that were part of the Transformation Initiative were run as separate projects within a project program. Co-ordination was required as there were process handoffs, shared resources, and touch-points between the envisioned business functions that would be delivered by the respective projects.

In 2013, BC Hydro planned to file an Application with the Commission under section 44.2 of the *Utilities Commission Act* if we continued to move forward with all of the Transformation projects at once, as we had originally contemplated. We ultimately changed our approach and did not proceed with all of the projects at once.

At one time, there was an expectation that an investment decision for all of the Transformation Technology projects would be sought concurrently and that the implementation of all of the Transformation Initiative Technology projects would commence immediately following the completion of the Transformation Blueprint, and be undertaken in parallel or in close succession.

In Fall 2013, to reduce risk, BC Hydro decided to pursue a longer duration implementation than previously anticipated, and developed a timeline that considered implementation in phases over multiple years as shown in the 'Technology Roadmap' included in the Transformation Update at Attachment 44-2 to BC Hydro's response to Mr. Dix IR 1.9.0. With the change in timing for the implementation of these projects, BC Hydro's expectations regarding when it would make investment decisions to implement the majority of Transformation Technology investments shifted to 2016 or later. As a result, BC Hydro decided it was more appropriate to bring forward applications to the BCUC for those IT projects over $20 million once more specific scope, cost and schedule details were determined. The Supply Chain Applications project is one such project where BC Hydro has communicated its intent to file an application to the BCUC. Please refer to BC Hydro's response to BCUC IR 1.32.1.

10.0 B. SAP-RELATED EXPENDITURES

Reference: SAP-RELATED EXPENDITURES
Exhibit B-3, Section 3.4, pp. 23-28
Transformation initiative technology projects

BC Hydro states on page 23 of the Consolidated Information Filing:

There were five primary SAP-related projects focused on delivering the required IT&T functionality within BC Hydro's SAP platform to complement the business work streams associated with the Transformation Initiative: Asset Management Foundational Technology, Work Management Foundational Technology, Customer Connections Foundation Technology, Schedule Dispatch Mobility, and Supply Chain Management. A sixth related project, Work Management Technical Readiness was underway and its designs were incorporated into the Transformation Initiative.

BC Hydro further explains on pages 27-28 how the Plan Schedule Work (PSW) project relates to the Transformation Initiative technology projects.

1.10.1 Please provide a timeline of the PSW project in chronological order which includes the following information:

i. All major project milestones/stages, including all EARs and business cases to support the various stages of the PSW project.
ii. A step-by-step description of the approval and oversight process which BC Hydro underwent internally starting from the blueprint and design phase of the original larger PSW project through to the completion of the PSW project.
iii. All BC Hydro-initiated notifications to the Commission related to the PSW project, including information provided in RRAs and in BC Hydro's Annual Reports to the Commission.

RESPONSE:

Date	Event	Description / Comment
October 2009	**Project started**	**Prior to the Transformation initiative**
March 2010	**F11 RRA submission**	**Total project forecast of $20 million submitted as part of Appendix J, page 82, Exhibit B-1**

Date	Event	Description / Comment
April 2010	**End of 'initial' phase**	**Conceptual process and system design developed to support Distribution Field Operations**
July 2010	**BCTC amalgamated into BC Hydro**	**PSW business case and plan adjusted to incorporate BCTC**
October 2010	**First draft of business case completed for design phase**	**Preliminary business case template used**
March 2011	**Business case & EAR approved**	**$4.5 million approved for "design phase".**
May 2011	**Initial draft of implementation phase business case**	**Work on a comprehensive implementation phase business case begins, including quantitative benefits**
November 2011	**Amended F12-F14 RRA submission**	**Total project forecast increased to $34 million as noted in amended Appendix J of F12-F14 RRA, page 161 of Exhibit B1-3 in that proceeding**
December 2011	**EAR Revision 1 approved**	**$7.3 million approved to continue 'design and implementation' work.** **It was expected that an implementation phase EAR/Business Case would be approved in early 2012 and that with this EAR approval the project would have sufficient bridge funding until that time.**
January 2012	**Version 7 of implementation phase business case**	**Business case development continued**
April 2012	**PSW Technical go-live**	**SAP plant maintenance functionality and interfaces between SAP and legacy systems (e.g., Passport, etc.) were implemented in production**
May 2012	**Transformation broadened in scope**	**Decision to increase scope of T&D Transformation to be enterprise Transformation**
May 2012	**PSW scope change**	**PSW scope incorporated into Transformation Initiative and PSW closed**

Date	Event	Description / Comment
May 2012	**CWASD**	**Coordinated Work Allocation Scheduling and Dispatch (CWASD) work stream of PSW established as a separate work stream within Transformation (see Work Management Technical Readiness project noted below)**
November 2012	**EAR Revision 2 approved**	**$10.5 million approved to cover life-to date costs of PSW net of expected transfers.**
November 2012	**Work Management Technical Readiness EAR & business case approved**	**$8.1 million approved for Work Management Technical Readiness project (name change of CWASD) to implement work allocation and scheduling solution.**
December 2012	**Work Management Technical Readiness go-live**	**Work allocation and scheduling solution implemented in production. Pilot begins for Nanaimo office (pilot concluded in May 2013)**
January/ February 2013	**Cost transfers**	**$4 million transferred from PSW to Work Management Technical Readiness and other Transformation technology projects (please see also section 3.4.3 of the Consolidated Information Filing)**
May 2013	**Work Management Technical Readiness completed**	**Decision not to roll out technical solution beyond pilot due to usability concerns with end-user software that were expected to be resolved in future Work Management implementation, and decision to close the project; Life-to-date actual costs of $5.7 million**

10.0 B. SAP-RELATED EXPENDITURES

Reference: SAP-RELATED EXPENDITURES
Exhibit B-3, Section 3.4, pp. 23-28
Transformation initiative technology projects

BC Hydro states on page 23 of the Consolidated Information Filing:

There were five primary SAP-related projects focused on delivering the required IT&T functionality within BC Hydro's SAP platform to complement the business work streams associated with the Transformation Initiative: Asset Management Foundational Technology, Work Management Foundational Technology, Customer Connections Foundation Technology, Schedule Dispatch Mobility, and Supply Chain Management. A sixth related project, Work Management Technical Readiness was underway and its designs were incorporated into the Transformation Initiative.

BC Hydro further explains on pages 27-28 how the Plan Schedule Work (PSW) project relates to the Transformation Initiative technology projects.

1.10.2 Please explain if the PSW project was intended to replace an existing non-SAP system being utilized by BC Hydro.

RESPONSE:

The PSW project was not intended to completely replace Passport or other non-SAP systems, but rather to replace specific business functions with equivalent or improved SAP functionality. For example, the PSW project was intended to replace work management and asset management functionality provided by the Passport system while leaving supply chain functionality in Passport. Also, the PSW project intended to integrate with Passport and other non-SAP systems.

For clarity, the primary drivers for replacing specific business functions of non-SAP systems with SAP functionality were to achieve a single source of information and to have better integration between business functions. For example, implementing work management functions in SAP would enable SAP to be a single source of work order information for all business units. In addition, work orders could be integrated more directly with related project and financial information which was planned to be in SAP.

10.0 B. SAP-RELATED EXPENDITURES

Reference: SAP-RELATED EXPENDITURES
Exhibit B-3, Section 3.4, pp. 23-28
Transformation initiative technology projects

BC Hydro states on page 23 of the Consolidated Information Filing:

There were five primary SAP-related projects focused on delivering the required IT&T functionality within BC Hydro's SAP platform to complement the business work streams associated with the Transformation Initiative: Asset Management Foundational Technology, Work Management Foundational Technology, Customer Connections Foundation Technology, Schedule Dispatch Mobility, and Supply Chain Management. A sixth related project, Work Management Technical Readiness was underway and its designs were incorporated into the Transformation Initiative.

BC Hydro further explains on pages 27-28 how the Plan Schedule Work (PSW) project relates to the Transformation Initiative technology projects.

1.10.2 Please explain if the PSW project was intended to replace an existing non-SAP system being utilized by BC Hydro.

1.10.2.1 If yes, please provide the name of the system, a description of why BC Hydro determined that this system required replacement, the condition of the existing system at the time the PSW project was initiated, the remaining useful life of the system, and the net book value of the system.

RESPONSE:

Please refer to BC Hydro's response to BCUC IR 1.10.2. The Passport system asset's net book value at the end of October 2009, the date of initiation of the PSW project, was approximately $5.9 million.

10.0 B. SAP-RELATED EXPENDITURES

Reference: SAP-RELATED EXPENDITURES
Exhibit B-3, Section 3.4, pp. 23-28
Transformation initiative technology projects

BC Hydro states on pages 27-28: "…the scope of PSW was then confined to a technical upgrade to deliver immediate benefits for Distribution, and the final authorized funding for PSW of $10.5 million aligned with the reduced scope."

Attachment 40 provides the project description of the PSW project provided in Appendix J of the Amended F2012-2014 RRA, which states: "Forecast capital cost is now $33.6 million with the project going into service in multiple stages across F2012-F2014."

1.10.3 Prior to the PSW project being reduced in scope, what was the total Authorized Cost for this project?

RESPONSE:

The total EAR approved amount for the PSW project was $7.3 million during the design phase of the project, and prior to the scope being reduced to a technical upgrade to deliver immediate benefits for the Distribution line of business.

10.0 B. SAP-RELATED EXPENDITURES

Reference: SAP-RELATED EXPENDITURES
Exhibit B-3, Section 3.4, pp. 23-28
Transformation initiative technology projects

BC Hydro states on pages 27-28: "…the scope of PSW was then confined to a technical upgrade to deliver immediate benefits for Distribution, and the final authorized funding for PSW of $10.5 million aligned with the reduced scope."

Attachment 40 provides the project description of the PSW project provided in Appendix J of the Amended F2012-2014 RRA, which states: "Forecast capital cost is now $33.6 million with the project going into service in multiple stages across F2012-F2014."

1.10.3 Prior to the PSW project being reduced in scope, what was the total Authorized Cost for this project?

1.10.3.1 How much of this Authorized Cost was allocated to other projects? Please specifically identify each project and the amount (SAP-related or non-SAP-related) to which the original budgeted costs were allocated.

RESPONSE:

Authorized costs are approved on a project by project basis and are not transferrable.

Approximately $4.0 million of actual expenditures were transferred from PSW to other projects. The projects that received the transfers and the respective amounts are detailed in the table below.

Project Name	Transfer Amount ($000)	SAP-Related
Work Management & Technical Readiness	**3,500**	**Yes**
Asset Management Foundation Technology	**190**	**Yes**
Schedule Dispatch Mobility	**160**	**Yes**
Customer Connections Foundational Technology	**60**	**Yes**
Supply Chain Management	**35**	**Yes**
Work Management Foundational Technology	**20**	**Yes**
Total	**3,965**	

10.0 B. SAP-RELATED EXPENDITURES

Reference: SAP-RELATED EXPENDITURES
Exhibit B-3, Section 3.4, pp. 23-28
Transformation initiative technology projects

BC Hydro states on pages 27-28: "…the scope of PSW was then confined to a technical upgrade to deliver immediate benefits for Distribution, and the final authorized funding for PSW of $10.5 million aligned with the reduced scope."

Attachment 40 provides the project description of the PSW project provided in Appendix J of the Amended F2012-2014 RRA, which states: "Forecast capital cost is now $33.6 million with the project going into service in multiple stages across F2012-F2014."

1.10.4 In consideration of the project scope for the PSW project as contemplated in the Amended F2012-F2014 RRA (i.e. forecast capital cost of $33.6 million), has BC Hydro now fulfilled all of the goals/outcomes contemplated in the original PSW project scope?

RESPONSE:

No, BC Hydro has fulfilled some, but not all, of the goals/outcomes contemplated in the original PSW project scope:

- **Please refer to Project No. 68 in Appendix A of the Consolidated Information Filing for a description of the key outcomes of the Plan and Schedule Work project that were delivered under the reduced scope for this project.**

- **Immediately following from the PSW project in F2013, the Work Management Technical Readiness project delivered additional technical scope required to support work management in SAP. Specifically, the Work Management Technical Readiness project implemented a scheduling tool for Distribution work orders, management reporting, and updates to the core SAP work management features implemented by PSW. The total cost of the Work Management Technical Readiness project is $5.7 million as at March 2016. Please refer to Project No. 70 in Appendix A of the Consolidated Information Filing for a description of the key outcomes of the Work Management Technical Readiness project.**

- **The Distribution Work Scheduling (DWS) project implemented work allocation, work management, work scheduling, and dispatch (partial) for Distribution work orders, all of which was envisioned by PSW. The total cost of the DWS project is $12.3 million as at March 2016. Please refer to Project No. 69 in**

Appendix A of the Consolidated Information Filing for a description of the key outcomes of the DWS project.

The primary areas of the original PSW project scope that have not been achieved are Generation & Transmission work allocation, work management, work scheduling, and dispatch; and advanced tools for optimizing schedules and dispatching for Generation, Transmission, & Distribution work orders.

As noted in section 3.4.3 of the Consolidated Information Filing, the remaining scope originally envisioned for PSW was not achieved due to the commencement of the Transformation Initiative, a broader initiative to implement a new operating model for the Transmission and Distribution business group involving organizational, process and technology changes. BC Hydro made a decision to incorporate the remaining deliverables related to work and asset management within the Transformation technology projects.

The majority of the as-yet not achieved PSW scope is envisioned to be delivered under a future Work Management project and a Scheduling Dispatch & Mobility project. The timing of these projects is to be determined.

10.0 B. SAP-RELATED EXPENDITURES

Reference: SAP-RELATED EXPENDITURES
Exhibit B-3, Section 3.4, pp. 23-28
Transformation initiative technology projects

BC Hydro states on pages 27-28: "…the scope of PSW was then confined to a technical upgrade to deliver immediate benefits for Distribution, and the final authorized funding for PSW of $10.5 million aligned with the reduced scope."

Attachment 40 provides the project description of the PSW project provided in Appendix J of the Amended F2012-2014 RRA, which states: "Forecast capital cost is now $33.6 million with the project going into service in multiple stages across F2012-F2014."

1.10.4 In consideration of the project scope for the PSW project as contemplated in the Amended F2012-F2014 RRA (i.e. forecast capital cost of $33.6 million), has BC Hydro now fulfilled all of the goals/outcomes contemplated in the original PSW project scope?

1.10.4.1 If no, please explain why not, identify the areas of the project scope which have not yet been achieved, and when/if BC Hydro plans to address these outstanding items.

RESPONSE:

Please refer to BC Hydro's response to BCUC IR 1.10.4.

10.0 B. SAP-RELATED EXPENDITURES

Reference: SAP-RELATED EXPENDITURES
Exhibit B-3, Section 3.4, pp. 23-28
Transformation initiative technology projects

BC Hydro states on pages 27-28: "…the scope of PSW was then confined to a technical upgrade to deliver immediate benefits for Distribution, and the final authorized funding for PSW of $10.5 million aligned with the reduced scope."

Attachment 40 provides the project description of the PSW project provided in Appendix J of the Amended F2012-2014 RRA, which states: "Forecast capital cost is now $33.6 million with the project going into service in multiple stages across F2012-F2014."

1.10.4 In consideration of the project scope for the PSW project as contemplated in the Amended F2012-F2014 RRA (i.e. forecast capital cost of $33.6 million), has BC Hydro now fulfilled all of the goals/outcomes contemplated in the original PSW project scope?

1.10.4.2 If yes, please explain how these goals/outcomes were achieved. Please specifically identify each of the projects which addressed the goals/outcomes and provide the total cost of each of these projects.

RESPONSE:

Please refer to BC Hydro's response to BCUC IR 1.10.4.

10.0 B. SAP-RELATED EXPENDITURES

Reference: SAP-RELATED EXPENDITURES
Exhibit B-3, Section 3.4, pp. 23-28
Transformation initiative technology projects

BC Hydro states on page 28: "The DWS [Distribution Work Scheduling] project (also depicted in Figure 1) leveraged some of the technical designs from PSW as well. DWS was intended to satisfy some of the business requirements defined in the PSW project, particularly those related to work allocation and scheduling of work orders."

1.10.5 Please provide the EARs and business case for the DWS project.

RESPONSE:

Please refer to BC Hydro's response to DIX IR 1.16.0 for the requested documents at Attachments 163 to 165.

10.0 B. SAP-RELATED EXPENDITURES

Reference: SAP-RELATED EXPENDITURES
Exhibit B-3, Section 3.4, pp. 23-28
Transformation initiative technology projects

BC Hydro states on page 28: "The DWS [Distribution Work Scheduling] project (also depicted in Figure 1) leveraged some of the technical designs from PSW as well. DWS was intended to satisfy some of the business requirements defined in the PSW project, particularly those related to work allocation and scheduling of work orders."

1.10.6 How much, if any, of the original authorized cost for the PSW project was allocated to the DWS project?

RESPONSE:

None.

Authorized costs are approved on a project by project basis and are not transferrable.

For clarity, however, some actual expenditures incurred by the PSW project were transferred to projects within the Transformation Initiative. In turn, some actual costs incurred by the Transformation Initiative SAP projects (Work Management Foundational Technology and Schedule Dispatch & Mobility) were transferred to the DWS project.

10.0 B. SAP-RELATED EXPENDITURES

Reference: SAP-RELATED EXPENDITURES
Exhibit B-3, Section 3.4, pp. 23-28
Transformation initiative technology projects

Appendix A, page 74 shows that the required level of approval for the DWS project was "Executive"-level approval.

1.10.7 Please confirm, or explain otherwise, that the DWS project was in compliance with BC Hydro's IT Delivery Standard Practices (ITDSP).

RESPONSE:

Confirmed. The DWS project was in compliance with BC Hydro's ITDSP.

10.0 B. SAP-RELATED EXPENDITURES

Reference: SAP-RELATED EXPENDITURES
Exhibit B-3, Section 3.4, pp. 23-28
Transformation initiative technology projects

Appendix A, page 74 shows that the required level of approval for the DWS project was "Executive"-level approval.

1.10.7 Please confirm, or explain otherwise, that the DWS project was in compliance with BC Hydro's IT Delivery Standard Practices (ITDSP).

1.10.7.1 If confirmed, please provide the supporting information to verify that the project was in compliance with ITDSP.

RESPONSE:

Please refer to the five attachments documenting ITDSP gate review outcomes for the DWS project as follows:

1. **February 5, 2014 - Gate 3: Definition to Implementation phase**

2. **July 9, 2014 - Gate 4: Release 1 Go-Live**

3. **November 26, 2014 – Gate 4: Release 2 Go-Live**

4. **June 10, 2015 – Gate 4: Release 3 Go-Live**

5. **October 14, 2015 - Sustainment Handover**

Conditional passes were granted at each gate review and conditions are noted. Also, please note that the DWS project proceeded into the Implementation phase directly upon inception based on Definition phase work performed under the Transformation Initiative. As such, the DWS project did not go through Gates 1 and 2.

Technology PMO – ITDSP Gate Reviews – Meeting Minutes
20140205 YT-0040?? Distribution Work Scheduling Project
Gate 3 Full Funding Approval

Key Reviewers	Name	Notes
Technology PMO	Laura Stoicescu	
Technology PMO	Karl Klann	
Technology Project Delivery	Davor Razlog	
Enterprise Architecture - Technology	John Lilleyman	Absent, no concerns raised
Enterprise Architecture - Process	Martin Fish	
FOICO	Scott MacDonald	
Generation Finance Director	Trish Pekeles	
Project Specific Reviewers		
Technology Corporate Business Lead	Sophia Tham	Absent, no concerns raised
Technology App. Owner	Bryan Baker	
Sustainment Lead		
Project Team		
Project Manager	Bryan Baker (Acting)	

Gate Review Slide Deck
<insert deck>

Discussion Points

- 2 areas of focus:
  - **Distribution work scheduling**. Collecting work order information from Passport, Gateway, DAD, PowerOn, SAM, meter exchange. Will add attributes in SAP to allow the work orders to be scheduled for execution. The benefits are crew productivity (hard benefits). There are soft benefits as well. The project will not implement a scheduling tool itself, it was too risky (not selected, not clear if we could build), so it was removed from scope. One dependent project, process and people, no technology component, is being run by the business in parallel. Business realizing even releasing a concept of a schedule at the district headquarters is a significant effort. Will be done mostly on paper or a simple Excel tool. Intent is to step by step move closer to being able to receive a SAP solution in future.
  - **Program Management Enhancements** for PDD, e.g. to be used by programs such as the Pole replacement program. They currently have orders in SAM, they duplicate them in Passport so that they can attach bills of materials, then create packages to hand off to consultants. Very involved process, Intent is to make all work orders available in SAP, link them to the program, and tie the planned work with the actual work. This will allow visibility into the planned work and the actuals (will make reconciliation easier). Need to get resources to charge their time to the right level of detail. The project is including a change management and training team to help with organizational readiness. Some of them will support David Lebeter's organization. Davor: very concerned about change management approach proposed. Worked with PPM in the past, it was clear at the beginning that Program Management for PPD was not part of the PPM scope. Hugo Shaw is now coming in to see how is the PPM solution going to be used. Not sure what is the organization commitment as it appears PPM was not used as originally planned. How will this be different and successful? Bryan B: pure program manager for masses of work orders. The intent is to apply PPM concepts only, and the business has confirmed they will only use the tool if it helps them. A demo occurred today, the business appeared to believe this would be useful.

Trish recommends getting Maureen behind it. Bryan confirmed he received recommendation from Maureen to get Doug Juby behind this.

- Bryan clarified some work was done in sustainment already, e.g. set up of some PPM like structures in SAP for System Improvements. They still have work orders, they are a program. Run by Distribution Engineering, with Denise and Dion buying into the solution. What this project is proposing is to give them a better way to create forecasts. Davor: management commitment and management sign off are key risks. Trish: Hugo Shaw wants his teams to adopt this, very supportive, has stated support in a recent meeting he attended. Chris O'Riley was present in this meeting as well.
- Davor R: with work orders, we had a lot of issues with synching. Is it SAP vs Primavera? Or SAP vs Passport? Bryan B. confirming it is SAP vs spreadsheets. This solution will give the business better reporting, will allow them to drill down into actual costs.
- DR: do you have adequate change management plans? Bryan Baker: just enough, the plans will be adapted to the current organization budgetary constraints; we expect up to 50 people that will have to use/run a few new SAP reports.
- Davor R.: business raised concern they do not have training budget for their teams, what is the status? Bryan B.: thinks have not changed. Pragmatic options being looked at, including delivering training through staff meetings where appropriate.
- Mode details on scope reviewed on slides 5 and 6.
- Business very interested in one piece of scope – a portal to allow external contractors to access work order information instead of the very elaborate hardcopy packages being created today. Contractors could come see what is assigned to them; receive it, print all of their work package (e.g. could be 50 page package).
    - Could there be personal information? If it is a customer connection, they have an address. Scott MacDonald: realizing we do send the information today, how would we do that securely? Bryan B: Consultants would have to have a VPN token, access to SAP. It is not even an extranet, so the project believes this will be quite secure.
    - Additional privacy Impact: reports will be provided to the business to allow them to compare regionals PLTs from one regional office to the other, at unit costing level only.
    - Scott MacDonald: highlighting the above two items will be part of the conversation that will need to occur during the Implementation phase, as the Privacy Impact Assessment is finalized and signed off.
- Bryan B. The Enterprise Architecture team very interested in the portal as well. Provided guidance: do not store data, just pass through. Try to use modern programming techniques that can be leveraged for future mobile apps. It will depend on the browser being used. Davor R: advising PM to speak with Gurmeet Singh. Gurmeet confirmed he is making a Technology decision during February 2014 to confirm the use of Google Chrome. Davor R.: we made an exception for the SAP FRE (Financial Reporting Enhancements) users to use Google Chrome, however we want to make sure this browser becomes a Technology standard and not an exception.
- Bryan added more context from previous gate review. At the previous gate review in December 2013, Schedule, Dispatch and Mobility was one element of scope, and it was decided that this will come back for review as a separate project. That project has to do some more IDN work first, and it will be scheduled for Gate 2 review when ready.

- Project Schedule
    - Peer review occurred with a couple of senior PMs from the Technology PMO.

- Assumed start asap. Already have a small team working on the project. No development work started. Started some work through sustainment, only on items that can stand on their own if project not allowed to proceed.
- Aggressive ramp up of staff into March (e.g PM expected to start asap, Bryan B is acting at this time). Trish P. seeking clarification if the project has DEF phase funds to bridge them till IMP can be approved? Bryan B. confirmed the project is still spending DEF funds from Transformation, may exhaust them at end of this week, and may need to bridge with a cost center for a couple of weeks. Trish P. inquired about the business case status – is it ready for review? did we identify the hard benefits, as well as the BOMA impacts? Who is the sponsor? Bryan B. confirmed hard benefits and BOMA included in the business case. David Lebeter is the Project Sponsor. The business case was reviewed/updated heavily over Christmas, has been seen by Greg Reymer. Also reviewed by Michael Wynn, T&D Finance, and Craig Watson and Lonnie Vaksdal from Generation Finance. Keith Anderson from T&D was heavily engaged in the writing of the business case and review with the listed parties.
- Development and Testing – 3 months
- Integration and UAT testing – additional.
- Cutover planned for July 28.
- Key feedback on schedule:
    - Too aggressive, $800K burn rate / month for April, May, June, not clear if the project can ramp up the team that fast.
    - Trish P.: Isn't it more advisable to under promise and over deliver? What is driving the July 28 deadline? Bryan B: getting close to feeling that July 28 is not doable. Davor R.: if you do not feel confident, speak to that now, and have Target Go Live date, with schedule contingency, and include Committed Go Live date: end of September. Action item: Laura Stoicescu to communicate this guidance to the Supply Chain Solutions Program Manager as well.
    - Bryan B. driven also by SAP Go Live dates, try to align with the end of July date, as the next one may be in September.
    - Davor R: what is really important for this project? Schedule, scope/quality or cost? Bryan B.: previously, emphasis was on schedule. In the last week, emphasis changed (June, July, August may be acceptable to the business). Field Ops want the solution earlier, can live with a delay though. Bryan B: by next week will know better. Davor R: commitment on dates is very important. Better to have a schedule contingency if not 100% confident in the plan now. Bryan B concerned about committing to a later date, as some teams may feel off the hook. Davor R: need to plan for the worse case scenario. Trish P emphasizing as well that it is very important for Technology to build credibility, it is really important to drive the team to the target date however only commit to a realistic date. Scott MacDonald: will adding schedule contingency impact the budget? Bryan B. only to very little extent, no, because resources would not ramp up as quickly and would likely ramp down as more testing/troubleshooting can be planned for.
- Feedback on project costs (slide 8)
    - Davor advising Bryan to check the IDC charges, they look low, they may not include the carry over cost from the Transformation program ($3.4M expense that will hit the project as soon as approved). : do we pay IDC?
    - Norm does not believe there is no need for new servers or new software. Bryan confirmed we use existing development and test environments and the team is

confident there wll be no need for new software or hardware to accommodate this project.

- Trish P: $359K for PM – is that more than one resource? Bryan B. Yes. However, noting that the rate for a senior PM can be $175/hr for a senior PM. The total PM cost does include the PM itself, also the admin support for PM, a financial analysit for the project, and a portion of Bryan B.'s time.
- IOMA costs identified are fairly low for a project of this size – change management and training, also other staff training charging to OMA. $295K. Bryan B. working closely with Daniel Watt to validate this, the team will be 5 people, some will develop curriculum material (currently planned to capitalize). Davor advising Bryan to check with Norm as there may be restrictions around what curriculum development work can be capitalized (e.g. may require on line courses to be developed).

- Key Risks
  - Aggressive schedule – mitigation recommended as above, **Condition 1.** Project Manager to update the schedule to include target schedule, contingency and committed schedule.
  - Business process change – Martin Fish has not been through the business process deliverables in detail, he checked in with Wayne Martell. An outstanding question from Wayne – are all process deliverables based on the blueprint delivered by the Transformation program in the summer? Yes, **Condition 2**. Project team to go back to validate business processes that they are still valid with the new (reduced) scope?
  - Davor R. Do you have a business lead identified? And do you need 2 business leads as you are delivering work for two distinct business areas? Bryan B. Intent is to have one, coming from Field Ops. **Condition 3**: David Lebeter to nominate a permanent business lead. **Condition 4**: project to have a Steering Committee set up. Bryan B.: good progress was made in identifying the key SMEs and Business Advisory Team members. **Conditions 3 and 4 MUST BE REMOVED BY END OF FEBRUARY 2014.**
  - Trish P: Are we impacting the same people twice with the dependency on related projects? E.g. reference was made in the presentation to business project that is also changing how timesheets are being processes for Field Operations. Bryan B: Yes Trish P: this could be another good reason to delay the Go Live of this project to September.
  - Bryan B. to confirm if the requirements were signed off. Wayne Martell hesitant to approve due to the scope change (scope reduction form the Transformation scope as known during summer of 2013 and what is being brought forward now). This is a signficiant risk, as it could impact the schedule and the budget. This is a known risk and it has numerous times in the past caused Technology projects cost and schedule overruns. **Condition 5:** the project must obtain business requirements sign off **by end of February 2014**.
  - RICEF discussion as Bryan explained the basis of the cost estimates. Trish P.: has anyone provided a sanity check on the estimates? Bryan B: the estimating process involved existing internal Technology knowledge, external consultants and the peer reviewers as outlined above.
  - **Condition 6**. Project must obtain Enterprise Architecture approval to proceed (formal approval, email is fine). This is again to prevent schedule and cost

impacts as very risky to proceed without this approval, the project may have significant surprises when approaching Go Live.

- Laura S.: The privacy impacts, if they are confirmed as dialogue continues with FOIOC, are they expected to be fairly modest and can they be accommodated with contingency? Bryan B. yes, e.g. may need to do some notifications, and control the internal access to some crew productivity reports. This should be easy to cover through contingency.
- Laura S.: what is the proposed contingency? Bryan B: 15%. Trish P. is this standard for Technology projects? Davor R.: usually 10%, for complex projects like this is normal to be 15%. Bryan B confirming 5% overtime (OT) embedded in estimates across the board.
- Davor R. – final note for Trish's benefit – on how the business case was developed for this project, Technology has very limited ability to provide input, and very limited visibility into how the business case was developed.

Outcome: **Conditional Pass** – project can continue Implementation work ahead activities, however conditions 1 through to 6 must be addressed as soon as possible – **and conditions 3 through to 6 must be addressed by end of February 2014**. The project is expected to return to Gate Review to confirm conditions were successfully removed or discuss options if not.

Process Architecture Feedback

Gate review -
process architecture (

From: Fish, Martin
To: Stoicescu, Laura
Cc: Lilleyman, John
Subject: Gate review - process architecture comments
Date: 2014, February 05 2:28:48 PM

Laura,

Here are my formal comments on today's gate review:

Distribution Work Scheduling:

- Level 2 maps and as-is work was completed as part of Transformation blueprint phase last year. Based on discussions with Wayne Martell, business owner and integration lead on the former Transformation project, the following condition should be added to this gate:

  "As process designs are based on the blueprinted to-be business processes from last summer prior to the de-scoping of Transformation, the detailed process designs for this project must be adjusted to reflect the current T&D as-is processes. This must involve discussion and sign-off by the business owners prior to any decisions on technology enhancements or other changes."

PowerGrid Enhancements:

- They are simply enhancing data in an existing system, there are no process changes. They've completed an Initial Process Impact Assessment, which I've reviewed, so they have our blessing to proceed. Hugh also confirmed that no changes since our last discussion, so no further process requirements for this project.

If you have any questions, let me know.

Regards
Martin

Martin Fish, CA, PMP
Enterprise Process Architecture

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Technology PMO – ITDSP Gate Reviews – July 09, 2014
Meeting Minutes

YT-00402 Distribution Work Scheduling (Release 1) – Gate 4 Go Live Review

Key Reviewers	Name	Notes
Technology PMO	Laura Stoicescu	
Technology PMO	Karl Klann	Not Present
Project Coordinator	Anda Tudor	Meeting Minutes
Enterprise Architecture - Technology	John Lilleyman	
Enterprise Architecture - Process	Martin Fish	
FOICO	Scott MacDonald	
Finance	Sherri Siddoo/Trish Pekeles	Not Present
Project Specific Reviewers		
Technology T&D Business Lead	Dan Boucher	
Technology App. Owner	Ben Setiawan	
Sustainment Lead	Ben Setiawan	
Project Team		
Project Manager	David Wong	
Regional Manager, Field Operations	Wayne Martell	T&D Business
Program Manager	Bryan Baker	Technology
SAP Solution Lead	Ben Setiawan	

Gate Review Slide Deck

DWS PMO Release 1
Go-Live Gate Review

Discussion Points

1. **Review project background – scope and objectives (see slide 3-5).**

Project Background:

- Currently, there is no single system that reports all the work in a particular area and to provide the visibility of workforce capacity within Distribution Work Scheduling
- Numerous existing IT systems create manual spreadsheets
- Existing IT systems have limited capabilities for the Distribution Project and Program Delivery (PPD) group or Distribution Engineering / Design to monitor the overall delivery of the fiscal capital and OMA program, or to provide updates and reports to various stakeholders
- This project is split in 2 releases:
    - Release 1 – scheduled Go Live for July 28
    - Release 2 – scheduled Go Live for December 8

Project Scope:

- Create a portal application for external service providers to receive, report, and complete externally executed work orders including work order packages.
- Develop reporting for PPD to track programs, projects and all types of work orders from all originating legacy systems (capital, maintenance, customer)

- Make work orders chargeable in SAP
- Simplify processes and systems PPD uses for allocating work to contractors and internal crews for each headquarter
- Improve reporting on: unit costing, job site time, available work by headquarter and crew type, and planned allocation of work versus actual

Release 1 Scope:

- Customize the interfaces SAP PS, SAP PM, Passport, PowerOn, SAM, Gateway interface
- Technical preparation for release 2
- Business Go live:
    - Direct charging - have PLT crews charge directly to routine trouble orders (business and technical sign off required)
    - Enhancements for timesheets currently used by PLT crews around the province - upload from Excel timesheet into SAP (business and technical sign off required)
- Program and PM: a new tool to allow PPD PMs to (system improvement projects) – to see work orders and forecasting

Questions from Laura S:

- In terms of technical and business changes, what systems do you touch?

Bryan B: SAP PM modules, Passport, PowerOn, SAM, Gateway, pretty much the current systems used by Distribution Work Scheduling.

- We will need the approval/signoff from these interfaces owners affected by this release.

Ben S: There is an outstanding issue regarding timesheets; issue with the technical solution, how we upload the timesheets in SAP; the solution needs to be supportable in the future.

- What is the plan to address the timesheet issue?

Ben S: We want to see a solution that is supportable in the future. We need to look at the design again if we need to change anything. The project suggested a solution/proposal but seems to be more to it; we need to discuss more.

Bryan B: The project proposed to have automatic upload in SAP but SAP standard is different. Using the SAP standard would require more clicks, using the proposed VB script to upload into SAP would give the users only one click. Some business users/managers would have a problem with multiple clicks and potentially not use the system. Discussions are pending - there is VB in the timesheet, the question is who sustains the VB if it breaks.

- Who is engaged in this discussion? Releases 1 cannot Go Live without this being addressed, as it impacts the support model for the proposed solution. **Condition #1 to Go live. The project must reach agreement with Sustainment and the Business on this issue prior to Go Live.**

Bryan B: The discussions are between Nada K, Enn K, Ben S and Bryan B. from Technology and Wayne M from Business.

Question from Dan B: can you hide this functionality from the business?
Wayne M: Yes, so technical go live may still be possible.

Question from Ben S: When is the business go live?
Bryan B: Business Go Live is tentatively scheduled for Aug 15th

Question from Martin F: Is change management dealt with?
Wayne M: Lynn Fleming is the business lead, will go to Dave Lebeter to get sign off on how to test it and how to roll it out. We understanding this is sensitive, Lynn has not yet hired anyone to deal with this.

Comments from Ben S: Other than timesheets, there is no other issue, the other objects are being tested; regression testing will occur next week. Provided everything is OK, business Go Live would be fine for mid August.
Comments from Bryan B: There is a risk that we may find defects that affect the functionality; will freeze code changes so that Customer Care workers will not be impacted; will do very tight change control next week during the changes; some business functions issues would need to be fixed in Sustainment.

2. **Schedule (Release 1) (see slide 6):**
   - Development complete: June 20, 2014
   - Testing complete: July 11, 2014
   - Release 1: scheduled Go Live on July 28
   - Release 2: scheduled Go Live on December 8

3. **List of deliverables (see slides 7-14):**

- **Detailed Design:** Review / approval in progress; approval date planned for July 22. Some of the specs are not yet written.
  Condition #2 to Go Live
  Question from Laura: What's the risk there as the design is still in progress? Did Nada K review the design? Did she sign off the design? To clarify, Nada is one of the key reviewers; she needs to be engaged earlier in the project and must approve the detailed design.
  Bryan B: we understand there might be a little bit of rework of the design document but we are not expecting major changes. No re-work need expected in the actual code.

- **Process Design (see slide 9):** T & D Process Governance Committee approved the process changes and impacts on June 27 subject to completion of two action items prior to the end of September 2014. Martin Fish confirmed that minor clean-up needs to happen, but the project is good for release 1. As a note, there are 7 processes to be completed as part of the T&D process.
  Question from Laura: Martin, how does the T&D process design tie into your work?
  Martin F: We follow our own process; at the same time we make sure there is alignment between the 2 departments.

- **RACA - Detailed Control Worksheets (DCWs) and Test of Controls (TOCs):** still to be approved by Michael Wynne. **Condition #3 to Go Live**
  Comments from Bryan B: we reviewed them with Phil Chan, only Michael Wynne needs to approve.
  Recommendation from Laura: Please make sure you are involving Michael Wynne early in the process and obtain his approval.

- **PIA:** in progress. FOICO has received several revisions and provided feedback. There are some concerns regarding timesheets and this need to be resolved before Release 1 Go Live. **Condition #4 to Go Live**
  Comments from Scott M:
    - There will be a lot of personal activity described in the timesheet: managers will have a clear idea where was a particular person at a specifically time.

  Wayne M: Why does this have to be dealt with on this particular project; we are only changing from the manual upload, to the automatic upload; there is nothing on the timesheet form that wasn't there before.

Clarification from Laura S.: all Technology projects must observe the PIA requirements. We cannot comment to how other timesheet solutions were implemented in the past without PIA being addressed. This project needs to assume accountability and address any PIA concerns that FOICO may raise for the project. Recommending the project takes this issue off line and resolves with Scott MacDonald, focusing on Release 1 as PIA sign off is a condition for Go Live. The project PIA needs to be split (one for release 1 and one for release 2). Additionally, Scott MacDonald clarified that an addendum to another PIA that Lynne Fleming has completed earlier is needed.
Action: Scott M, Wayne M, Bryan B and David W to meet and resolve the PIA issue.

- **Change Implementation Plan:** approved by Daniel Watt, review in progress by John Kapalka, Doug Juby.
  Question from Laura S: Wayne, how comfortable are you with the change plan?
  Wayne M: I am comfortable with the change plan as there are not a lot of changes for the business, only on the technical side.

- **Test Plan:** Approved by Bryan Baker
- **Training Plan:** approved by Daniel Watt
- **Training Material:** Will be available in the latter part of July 2014
- **Service Introduction Plan:** under review with Ben and Stephanie. Dependant on the resolution of the timesheet upload issue. **Condition #5 to Go Live**
- **UAT Signoff:** UAT sign-off will be available after the UAT is completed on July 18, 2014. **Condition #6 to Go Live**
- **Cutover plan:** in progress. To be approved on July 18. Thomas and Nada to approve. **Condition #7 to Go Live.**
  - Dry run July 23-24
  - SAP transport will start on Saturday, once Call Centre is closed
  - BW items will be delayed for the subsequent week;

- **Operational Readiness:** in progress, to be approved by Bryan B. **Condition #8 to Go Live**
- **Production Turnover Documentation:** review in progress. **Condition #9 to Go Live**
- **Open Defects:**
  - High Severity: 9 open (ready for re-testing).
  - Medium Severity: 10
  - Low Severity: 5
  - A change Control will be in place starting Monday, July 14

  Question from Laura S:
  - Has the project done enough testing?

  Bryan B: the concern is the regression of the customer care area. This morning we did another testing; turned out there are 4 issues that don't affect the customer care and they are already fixed. Therefore I am confident with the testing. For medium and low issues, we might agree with Sustainment to defer them for December release 2.
  - Ben, what's your feeling with this release 1 Go live?

  Ben S: there is some major shift due to this project. We do what we need to do for the regression test; there is some test for work order; for the moment we should be ok; we just have to be careful when we go live to fix all the issues when we go to production, in a timely manner.

Comments from Bryan B: Also, this is a joint Go live with SMI 6.
Laura S: Are you comfortable with this? Specifically, are cutover responsibilities clear across the teams, to ensure that issues are quickly resolved if anything comes up during the cutover?
Bryan B: yes, some of the resources from SMI team are working on our project as well.

- **Stabilization Support:**
  - DWS project team responsible for Application Support for Release 1 until sustainment analyst (SAP Plan Maintenance) has been on-boarded (Ben S. hiring)
  - Transition Application Support to Application Maintenance & Sustainment team at the end of post go-live stabilization period for Release 2 in March 2015
  - The project will leverage existing support processes – Project must review with the appropriate managers / confirm they are comfortable their teams have everything they need to be able to provide support post Go Live:
    - Help Desk (71444) (Bryan to help David W. understand who to talk to)
    - Business Support Desk (Lisa Williams' team)
    - ITSM ticket (routed to ATS SAP EAM group) (Ben S. team)

Recommendation from Laura S: as lesson learned, this is late in the project to involve these units in your communications. Please involve earlier for release 2. For the Support Model you MUST get approval from Help Desk (TELUS), Business Support Desk (Lisa Williams) and Ben's future group. For release 1, **Condition #10 to Go Live**

Question from Laura S: Should you have been engaged in this project John L, considering this is a SAP project and Enterprise Architecture has delegated the engagement to Nada Kovacevic?
John L: I wasn't involved at all in this release so I cannot comment.
Bryan B: for release 2 yes, we will involve John Lilleyman in the discussions. For release 1 we could have engaged him, the project will ensure they engage both John and Nada early and often for release 2.

Summary of Actions:

- PM to meet with Scott M and Wayne M to discuss about PIA for release 1.

Summary of Recommendations:

- PM to involve the appropriate reviewers and approvers early in the project.

Outcome: Conditional Pass

(PM) to address the following conditions before the Release 1 Go Live:

1. Resolve the timesheet upload issue (project proposed solution not meeting SAP standard, and support model for the solution not
2. Obtain Detailed Design approval from Nada Kovacevic
3. RACA – DCWs TOCs approval from Michael Wynne
4. PIA approval from Scott MacDonald
5. Service Introduction Plan
6. UAT Signoff from the business
7. Cutover Plan approval – Bryan Baker, Nada Kovacevic
8. Operational readiness approval – Bryan Baker
9. Support model approval – from appropriate leads, depending on proposed model
10. Production Turnover Document approval – Ben S., Stephanie Lee

ITDSP Gate Review

PROJECT ID & NAME: YT-00402 Distribution Work Scheduling
Project Phase: IMPLEMENTATION (Release 1 – July 28 Go-Live)
Project Manager: David T Wong

Date: July 9, 2014

BC hydro
FOR GENERATIONS

AGENDA

- Introductions
- Project Objectives
- Scope overview
- Timeline
- IT DSP Go-Live Gate Review – Release 1 (July 28 Go-Live)
  - Key Deliverable Summary
  - Functional Design & Technical Design
  - Process Design
  - Testing
  - Cutover Plan
  - Change Management Plan
  - Post Go-Live Stabilization & Support

Project Objectives

- Challenges: Distribution Work Scheduling
  - No single system that reports all the work in a particular area and to provide the visibility of workforce capacity (e.g. 2 or 3 man crew, etc.)
  - Numerous existing IT systems create manual spreadsheets

  Future State: Enable Basic Distribution Work Scheduling
  - Ensuring all work is available and visible within one system will enhance the ability for the Distribution Scheduler to produce a forward looking work schedule, which optimizes productivity for each headquarters
  - Allowing Distribution Schedulers to ensure crews have the right type of work and are as productive as possible
- Challenges: Distribution Project & Program Management
  - Existing IT systems have limited capabilities for the Distribution Project and Program Delivery (PPD) group or Distribution Engineering / Design to monitor the overall delivery of the fiscal capital and OMA program, or to provide updates and reports to various stakeholders

  Future State: Enhance Project / Program Management Capabilities
  - Enhancing the ability to manage and report on projects and programs (i.e. the annual fiscal capital and OMA programs)
  - Enabling greater success in delivering work programs according to plan with forward looking visibility to dollars and units allowing for more dynamic, in-year program course correction

Scope

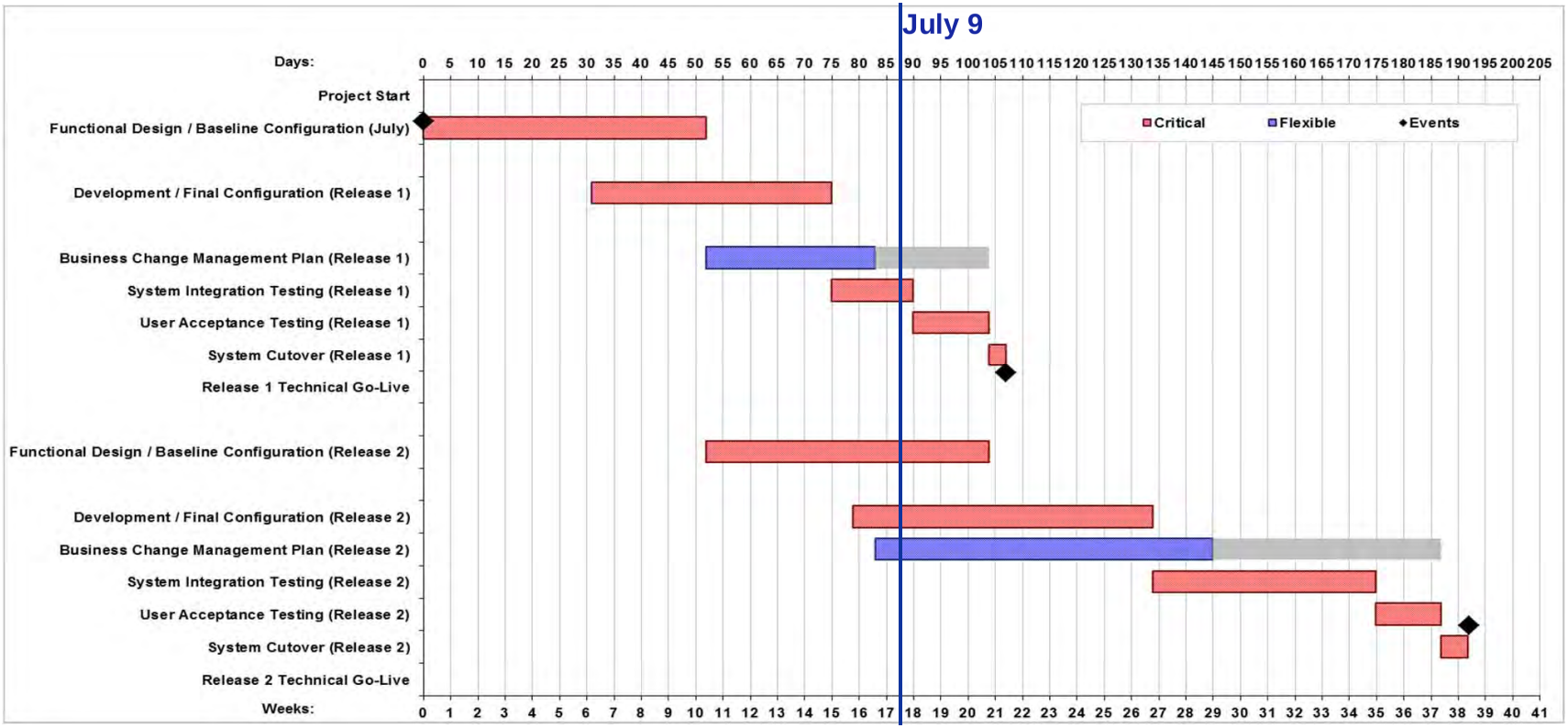
- Distribution Work Scheduling
  - Create a single source for work orders and work order operations. (Reduce duplication of entry of work orders, e.g. stop recreating SAM work orders in Passport)
  - Ensure key work attributes such as crew compliment (e.g. 2 or 3 man crew) are used in identifying work available for each headquarters
  - Make work orders chargeable in SAP
  - Capture detailed address and location data on SAP work orders to facilitate scheduling of Distribution work
  - Simplify processes and systems PPD uses for allocating work to contractors and internal crews for each headquarter
  - Improve reporting on:
    - Unit costing
    - Job site time
    - Available work by headquarter and Crew Type
    - Planned allocation of work versus actual

Scope

- Distribution Project & Program Management
  - Create a portal application for external service providers to receive, report, and complete externally executed work orders including work order packages.
  - Develop reporting for PPD to track programs, projects and all types of work orders from all originating legacy systems (capital, maintenance, customer):
    - Track original commitments and adjustments in work programs during the year
    - Manage and track progress on work programs, by month, quarter and annually by hours, dollars and % completion, including the ability to forecast and consolidate by work programs by dollars and units
    - Enable visibility of planned and actual units to understand changing costs of work program against work completion

Timeline

	Release 1 Milestones	Forecast Date		Release 2 Milestones	Forecast Date
July Go-Live	Functional Design / Baseline Configuration Completed	2014-05-15	Dec Go-Live	Future State Business Processes Approved	2014-06-27
				Functional Design / Baseline Configuration Completed	2014-07-31
	Development / Final Configuration Completed	2014-06-20		Development / Final Configuration Completed	2014-09-19
	Business Change Management Plan Approved	2014-07-02		Business Change Management Plan Approved	2014-09-30
	System Integration Test Completed	2014-07-11		System Integration Test Completed	2014-11-12
	User Acceptance Test Signed Off	2014-07-22		User Acceptance Test Signed Off	2014-12-01
	System Cutover / Technical Go-Live	2014-07-28		System Cutover / Technical Go-Live	2014-12-08



Key Deliverable Summary IT DSP

BC hydro FOR GENERATIONS

Key Deliverables	Status	Planned Approval Date	Sign-Off / Approval Authority
Detailed Design	Review / approval in progress	July 22	Ben Setiawan Stephanie Lee Nada Kovacevic
Process Design	Review in progress (T & D Process Governance Committee approved process changes & impacts)	July 18	Martin Fish
Requirements Traceability Matrix	Review in progress	July 18	Bryan Baker
RACA TOC	In progress (under review by Corporate Finance)	July 22	Michael Wynne
PIA	Review in progress	July 18	Scott Macdonald
Test Plan Test Report Defect Log	Approved In progress In progress	 July 22 July 22	Bryan Baker
Cutover Plan	In progress	July 18	Bryan Baker
Change Management Plan Training Plan	Approved Review in progress	 July 18	Daniel Watt John Kapalka, Doug Juby
Service Introduction Plan	Review in progress	July 18	Ben Setiawan Stephanie Lee
Production Turnover Documentation	Review in progress	July 22	Ben Setiawan Stephanie Lee
Operational Readiness Assessment	In progress	July 23	Bryan Baker

Functional Design & Technical Design

- Specification documentation maintained in SAP Solution Manager
- Review & approval
  - DWS solution lead approves functional specifications
  - BCH solution leads approves functional specifications
  - BCH technical lead approves technical specifications
- Developers are still completing technical specifications as development and break-fixes are higher priority

Process Design

- 7 processes

4.010.050.051D	Elaborate WBS - Project_DWS
4.010.060.061D	Develop Resource Loaded Schedule_DWS
4.010.100.100D	Progress Project or Program_DWS
4.010.100.110	Monitor Project or Program_DWS
4.060.010.010	Execute_Work_W4
4.070.010.010	Complete_Work_Order_W4
6.070.010.011	Administer Timesheet

- Plan to implement change control for the business process maps starting in the latter part of July

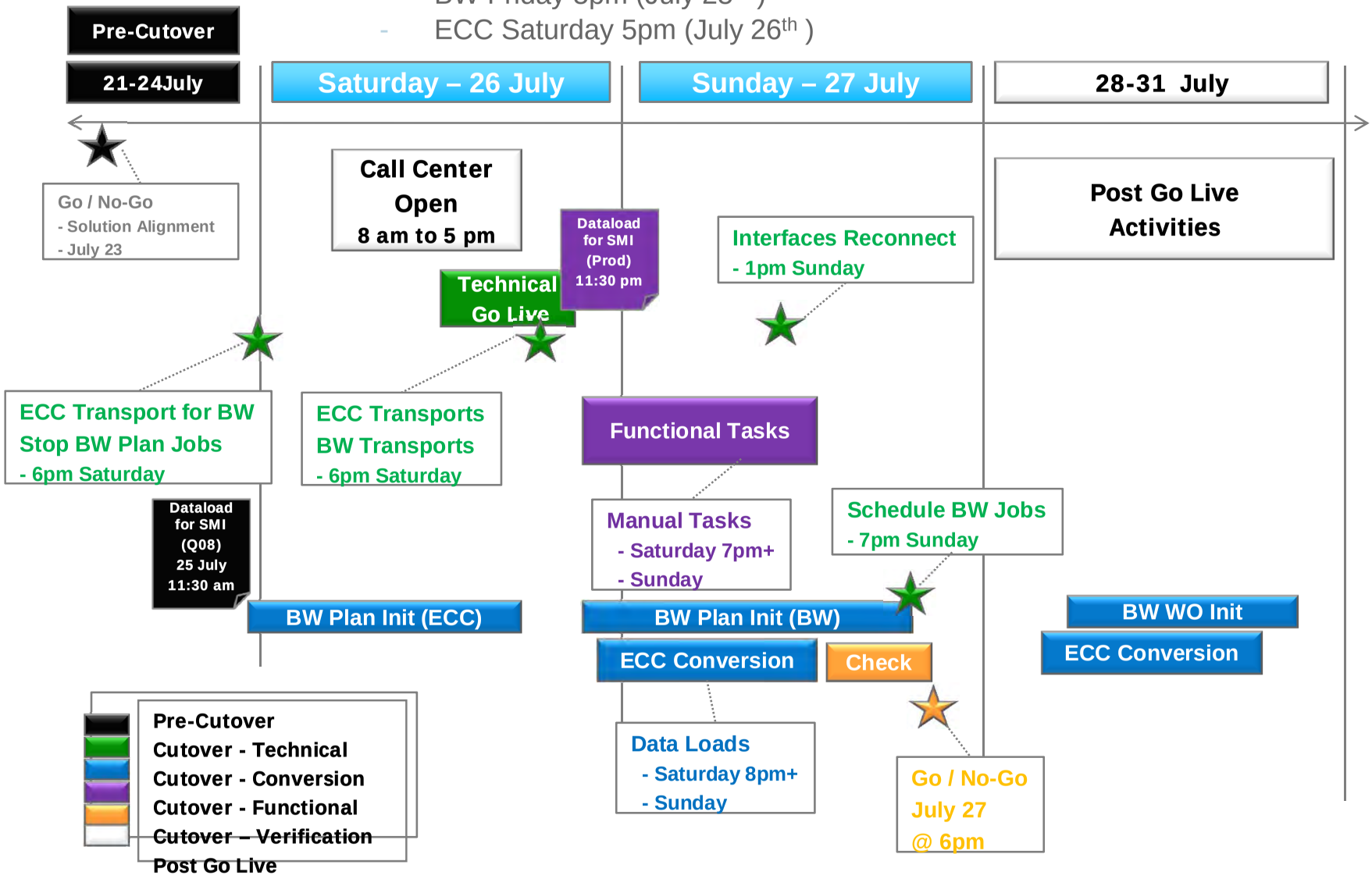
Testing

- Completed Integration Test #1: June 17 to July 7
- Integration Test #2 in progress: July 7 to July 11
- User Acceptance Test (UAT): July 14 to 18
- Test defects as at July 8:

As at July 8	High	Medium	Low	Total	
New / Not Started	0	0	0	0	0%
Assigned	0	7	4	11	14%
Fixed	2	0	1	3	4%
DEV Tested	0	0	0	0	0%
Ready for Test	7	3	0	10	14%
Closed	11	38	3	52	68%
	20	**48**	**8**	**76**	

Cutover Plan

- BW Friday 5pm (July 25th)
- ECC Saturday 5pm (July 26th)



Inquiry of Expenditures related to the adoption of the SAP Platform

BCUC IR 1.10.7.1 Attachment 2

Change Management Plan

Stakeholder Impact: Release 1 (July Go-Live)

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Stakeholder Group	Overall Impact	Impacts	Group size
Field Operations			
• Managers (M1)	Low - Medium	• Potentially work in two processes: manual fax or upload e-timesheet directly into SAP • Crew no longer use a PassPort collector number only the PowerOn Trouble Order	36
• Processing Centre	Low	• No longer enter Dist. Crew timesheets (phased rollout) • Crew no longer use a PassPort collector number only the PowerOn Trouble Order	38 + 16
• PLTs & Apprentices • Trades Trainees who work on Dist. Trouble (D & T)	Low	• No longer use a PassPort collector number **only** the Dist. PowerOn Trouble Order • Must code each Trouble Order individually	309 + 94
• Operations Analysts	Low - Medium	• New Trouble Order storm process; new technology; ability to do mass updates • No longer use a PassPort collector number only the PowerOn Trouble Order	2
• Operations Revenue (Damage to Plant)	Low - Medium	• New technology, all costs contained in one SAP order – no longer use a PassPort collector number; ability to do mass updates; reports generated from a different system; advise Sundry Billing which Trouble Orders to consolidate for invoicing	3
Dist. Prog. & Proj. Delivery / Dist. Eng.			
• Proj. Mgrs (Capital & DE) / Engineers	Medium	• New technology, screens, process and reports for forecasting and progressing projects	6 35
• Proj. Service Coordinators / Techs / Asst.	Medium	• New screens, process and reports for progressing multiple projects (multiple updates to multiple projects); ability to view projects linked to work orders on one screen	5 9
• DE&D Designers & Drafters	Low	• For non-pole updates to as-built, GIS will be updated by drafters (no longer via a work order unless a pole is involved)	tbc
Finance			
• Sundry Billing	Low	Bundle multiple orders into a single invoice; will see orders start with a P instead of a W	5
External Stakeholders			
• Line Contractor (1)	Low	Code each trouble order and the time against it individually	TBC
• AMEC	Medium	Same as BC Hydro Capital Projects' Project Mgrs, Engineers, Designers & Project Techs	TBC

Inquiry of Expenditures related to the adoption of the SAP Platform
Page 17 of 19
BCUC IR 1.10.7.1 Attachment 2

Change Management Timeline

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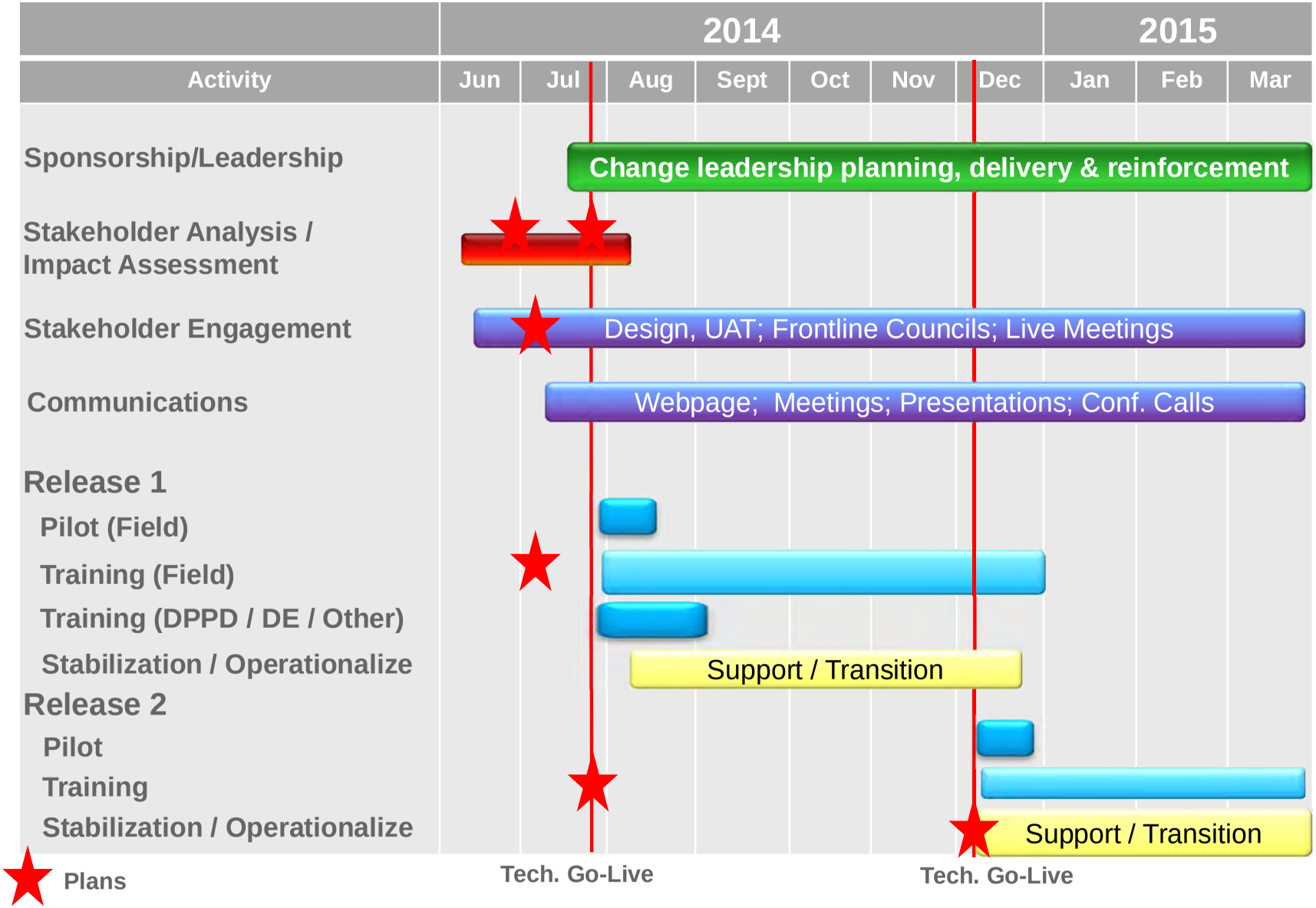

Post Go-Live Stabilization Support

- DWS project team responsible for Application Support for Release 1 until sustainment analyst (SAP PM) has been on-boarded
  - SAP PS knowledge transfer occurs as soon as Release 1 is implemented
  - SAP PM knowledge transfer occurs when the sustainment analyst has been on-boarded
- Transition Application Support to Application Maintenance & Sustainment team at the end of post go-live stabilization period for Release 2 in March 2015
- Leverage existing support processes
  - Help Desk (71444)
  - Business Support Desk
  - ITSM ticket (routed to ATS SAP EAM group)
- Establish Tool Committee for Work Management in August

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Technology PMO – ITDSP Gate Review Meeting Minutes
YT-00402 DWS Release 2

Project Details		
Date	2014-11-26	
Project Code	YT-00402	
Project Name	Distribution Work Scheduling	
Gate	Gate 4 Go Live Approval	
Key Reviewers	**Name**	**Notes**
Technology PMO	Laura Stoicescu	
Technology PMO	Thalia MacIsaac	
Technology PMO	Anda Tudor	
Enterprise Architecture - Technology	Salman Shahid/John Lilleyman	
Enterprise Architecture - Process	Jodi Somerville/Christine Griffiths	
FOICO	Scott MacDonald	
Generation Finance	Claudia Moniz de Sa	
Project Specific Reviewers		
Technology T&D Business Lead	Dan Boucher	Not Present
Technology Application Owner	Ben Setiawan	Over the phone
Technology Enterprise Applications Lead	Enn Kiudorf	Not Present
Technology Application Sustainment Lead	Ben Setiawan	
SAP Technology and Mobility Manager	Nada Kovacevic	
Project Team		
Project Manager	David Wong	
Business Lead / Project Initiator	Wayne Martell	
Program Manager	Bryan Baker	

Gate Review Slide Deck

DWS_PMO_Gate_4_Review_-_Release_2

Previous Gate – any outstanding conditions?
See Conditions from Gate 3 here. See conditions from Release 1 Gate 4 Go Live here.
Gate 4 Release 2 Go Live Approval – Key Discussion Points
See slide deck for details on the project background, scope and objectives. **Project Background Summary:** • Overall project objectives have not changed, the main objective is to see all work orders from

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Passport, SAM, SAP, PowerOn etc. in one place, in SAP and to have all right attributes (location, date, type of work, crew and ISD) on every Work Order.

- This project was split in 2 releases:
  - Release 1 – went Live on July 28
  - Release 2 – scheduled to Go Live on December 8
- Release 2 scope:
  - Significant changes in technical architectures
  - A new and enhanced tool set for end users who perform work allocation
  - A planning tool for regional planner (to see what work their need to keep the crews busy)
  - New scheduling transaction screen, allows to create calendar view for every distribution line crew, showing where the work is on the map, allow to schedule from list or map
  - A change to the work flow for customer connect was not in the scope but was done; in the name of supporting better scheduling

Noting that the process maps for Express Connect and DWS were updated, to ensure readiness for roll out. Maps updated, users trained, everything was tested, communication and roll out plans are ready.

Schedule:

- Release 1: go live in July, stabilization ongoing with minor feature updating. Project team supported stabilization of R1, will continue to support to end of fiscal.
- Release 2 UAT end: targeted for Nov 28
- Release 2 Go Live: Dec 6-7, system in production on Dec 8
- Customer Connect training: started on Nov 24 – 28
- Business rollout: Dec 8 – Feb 28

Noting that the extent of the performance testing done by the project was limited. As a mitigation, a gradual business roll out is planned, particularly in areas with large number of users (e.g. Field Operations). Some performance testing identified in user testing, and fixed (e.g. an issue with Passport performance being impacted). No formal load test was executed. The performance testing was limited by budget and schedule constraints. The project team has put mitigation plans in place to address issues if they do come up at Go Live. Mainly limit or stop business usage if it is causing performance issues, until they are resolved. Both business and technology are aware of the risk assumed by compressing the schedule, and are prepared to work together to address performance impacts if they do materialize. The Project Manager noted that the software is ready now to be performed tested, but it wasn't ready any sooner than few weeks ago and the schedule cannot accommodate further testing at this time. The project team will provide warranty and stabilization support post Go Live until late March 2015.

A future DWS release, for the Contractor Portal Implementation, is targeted for April 2015 (delay was approved by the Steering Committee, as it was not feasible to complete this work for the Dec 8 roll out. As this functionality is external facing, and based on the lessons learned with Release 2, the project team is assessing the performance testing needs and will incorporate in the schedule of the next release as needed. **Action 1 for PM**.

Knowledge Transfer (KT) to the Sustainment team is targeted to start in January and continue through to early March, with Sustainment Handover planned for late March 2015. This schedule could not be brought forward due to both project and Sustainment teams being very busy with the DWS Release 2 respectively other projects (e.g. SAP EHP 7 upgrade) preparing for Dec 8 Go Live, and post go live support activities likely to occur in Dec 2014. Confirmed that a new Sustainment resource in the SAP team has also just started, and will be available for KT activities as planned.

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Noting that this is not an ideal situation, the risk is mitigated by the fact that the project team will provide warranty and stabilization support till Sustainment Handover review is completed in late March 2015. To further mitigate that, the Steering Committee has requested to put in place a work program to be able to support this release and address future small enhancements.

Noting the SAP Technical Lead expectation that the processes that will be followed by the project team to address production fixes during the warranty and stabilization period must be documented and agreed to, as the established Sustainment processes must be followed to ensure no impact to Production. **Action 2 for PM. Must be addressed before Go Live.**

Gate 4 Specific Deliverables	Status	Notes
Detailed Designs: Functional Specifications, Configuration documents, Technical Specifications	In progress	Functional Design (Sign off required by SAP functional leads – Ben Setiawan and Myra Cayme): Functional designs for key development items have been reviewed with various solution leads. Project team will provide final update to the functional specifications and configuration documents after the Dec 8 go-live. Technical Design (Sign off required by SAP tech lead – Nada K): Project team will provide final update to the technical specifications before Dec 8 go-live Due to limited engagement of the SAP Functional and Technical Leads during the project, and due to the outstanding issues and concerns raised with both Functional and Technical Designs (primarily concerns with the amount of customization), the sign off of these deliverables is deferred to the Enterprise Applications Lead, Enn Kiudorf, and Project Delivery Lead, Davor Razlog. **CONDITION 1 FOR GO LIVE – Obtain Detailed Design sign off as stated above.**
ADD	Ready for review	ADD was sent to Neil Rerup and Salman Shahid for their review and sign-off on Nov 16 No major concerns identified. **CONDITION 2 FOR GO LIVE – Obtain ADD sign off.**
RACA - Detailed Control Worksheets (DCWs)	Ready for review	The project anticipates no net new financial controls in Release 2. However, Michael Wynne has not yet provided sign off, as a number of process areas are still being validated. **CONDITION 3 FOR GO LIVE – RACA sign off from Michael Wynne.**
PIA	Ready for review	There are 2 PIAs on this release - *DWS Release 2 PIA* and *Line Monitor PIA.* ***DWS Release 2 PIA.*** FOICO raised concerns regarding notification of timesheet data collection and use. The PIA in its current form is noncompliant with the statute. Options - the business accepts the risk identified in the PIA (the noncompliance concern) OR the business agrees to do the recommended notification. Noting that FOICO is not comfortable with the business area accepting the risk as this was done also on DWS Release 1 and it appears to be creating a pattern of proceeding with non

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		compliant PIAs. While FOICO will not stop the project from proceeding to Go Live if the business accepts the noncompliance risk, FOICO will elevate this concern to Ray Aldeguer and is requesting the Technology PMO to elevate the concern to Don Stuckert and Davor Razlog for awareness. **Agreement:** Log both PIAs as non-compliant, and have David Lebeter or delegate sign off acceptance of the risk. Scott M. will communicate the concern to Ray Aldeguer and the Technology PMO will communicate the concern to Davor Razlog and Don Stuckert. **CONDITION 4 FOR GO LIVE – business acceptance of the noncompliance risk must be documented.**
Process Architecture Deliverables	Conditional Approval	The project presented Release 2 process impacts at the Sep 30 Process Governance Committee. Several process owners decided to delay process sign off until after UAT. Process Architecture team identified a list of higher priority updates to the process maps that must be done prior to go-live; further minor edits will be done post go-live, in December 2014. Susan M and Jodi S provided feedback to the project team. As UAT was not signed off yet on the Business process, the Process Deliverables are Conditionally approved. Also, there is one outstanding process to be documented. There are 2 conditions: 1 to be met before going live and 1 after. **Action 3 for Jodi S:** Jodi to send the Technology PMO and the DWS PM the clear list of process updates that must be closed before Go Live (**CONDITION 5 FOR GO LIVE),** and the list of process updates that must be closed post Go Live, prior to Sustainment Handover Review. **Nov 29 note: list provided**, **with project team to address.**
UAT Signoff	In progress	UAT still in progress. At the time of the gate review, 47% of UAT testing had been executed (1.5 weeks of execution), with remainder expected to be completed within less than one week. It was noted in the review that this poses significant risk to the project. UAT Signoff targeted for Dec 3 **CONDITION 6 FOR GO LIVE – obtain UAT sign off for Release 2.**
Cutover Plan	Ready for Review	Ben Szeto had merged DWS cutover plan into the overall plan, still needs confirmation of duration, resources and dependencies for many steps. Nada K confirms more work is required, no show stoppers identified. **CONDITION 7 FOR GO LIVE** - Obtain cutover plan sign off
Training material	In progress	Training materials need to be updated in December after UAT & go-live have been completed. The business is comfortable with this work being completed after Go Live, will validate status at Sustainment Handover Review.
Service Introduction Plan	Ready for Review	As the project team will continue to support the business during the stabilization period (post Dec 8 and until late March 2015), this deliverable is expected to be approved prior to the Sustainment Handover Review in late March.
Testing	In progress	• **Open Defects: 75** – at the time of the gate review, 8 show stoppers, no show stoppers for the customer care area

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		• Integration Testing cycle 2 (IT2) test& regression testing on going: 70% complete; there might not be 100% complete by Friday. The project will review with the Steering Committee (Friday, Nov 28) the risks of not having testing completed. • UAT: 47% done; plan to finish by Friday. **CONDITION 8 FOR GO LIVE** – Running integration testing cycle 2 in parallel with UAT, the actual level of completion of the testing and the large number of defects still open poses significant risk to the stability of the solution. This must be reviewed in detail with the Steering Committee to support an informed Go/No Go decision. **Action 4 for PM:** To send SC minutes to the Technology PMO to confirm the risk was adequately discussed. Noting that the number of defects being open is stabilizing at this time. The pace of the business roll out will have to be confirmed with the business at the Steering Committee session.
Test Report	In progress	The team is still addressing large numbers of open defects – see above.
Readiness Checklist and Assessment	Red	Primarily due to testing status, also other concerns as documented above.
PTO Documentation	Ready for review	As the project team will continue to fully support this release during stabilization, the sign off of the PTO documentation is expected to occur post Go Live, prior to Sustainment Handover in late March 2015.
Action Items		**Assigned To**
See above		
Other Recommendations		n/a
Outcome		**CONDITIONAL PASS: See 8 conditions above, and note that they must be addressed prior to Go Live.**

ITDSP Gate Review

PROJECT ID & NAME: YT-00402 Distribution Work Scheduling

Project Phase: IMPLEMENTATION

Project Manager: David T Wong

Date: Nov 26, 2014

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AGENDA

- Project Objectives
- Scope overview
- Project Timeline
- IT DSP Go-Live Gate Review – Release 2 (Dec 8 Go-Live)
  - Key Deliverable Summary - ITDSP
  - Operational Readiness & Assessment
  - Business Rollout Plan
  - Cutover Milestones
  - Post Go-Live Stabilization Plan

Project Objectives

- Enable Basic Distribution Work Scheduling
  - Ensuring all work is available and visible within one system will enhance the ability for the Distribution Scheduler to produce a forward looking work schedule, which optimizes productivity for each headquarters
  - Allowing Distribution Schedulers to ensure crews have the right type of work and are as productive as possible
  - Improve crew productivity and efficiency
  - Improving reporting

- Enhance Project / Program Management Capabilities
  - Enhancing the ability to manage and report on projects and programs (i.e. the annual fiscal capital and OMA programs)
  - Enabling greater success in delivering work programs according to plan with forward looking visibility to dollars and units allowing for more dynamic, in-year program course correction

Scope

- Distribution Work Scheduling
  - Create a single source for work orders and work order operations. (Reduce duplication of entry of work orders, e.g. stop recreating SAM work orders in Passport)
  - Ensure key work attributes such as crew compliment (e.g. 2 or 3 man crew) are used in identifying work available for each headquarters
  - Make work orders chargeable in SAP
  - Capture detailed address and location data on SAP work orders to facilitate scheduling of Distribution work
  - Simplify processes and systems PPD uses for allocating work to contractors and internal crews for each headquarter
  - Improve reporting on:
    - Unit costing
    - Job site time
    - Available work by headquarter and Crew Type
    - Planned allocation of work versus actual

Scope

- Distribution Project & Program Management
  - Create a portal application for external service providers to receive, report, and complete externally executed work orders including work order packages
  - Develop reporting for PPD to track programs, projects and all types of work orders from all originating legacy systems (capital, maintenance, customer):
    - Track original commitments and adjustments in work programs during the year
    - Manage and track progress on work programs, by month, quarter and annually by hours, dollars and % completion, including the ability to forecast and consolidate by work programs by dollars and units
    - Enable visibility of planned and actual units to understand changing costs of work program against work completion

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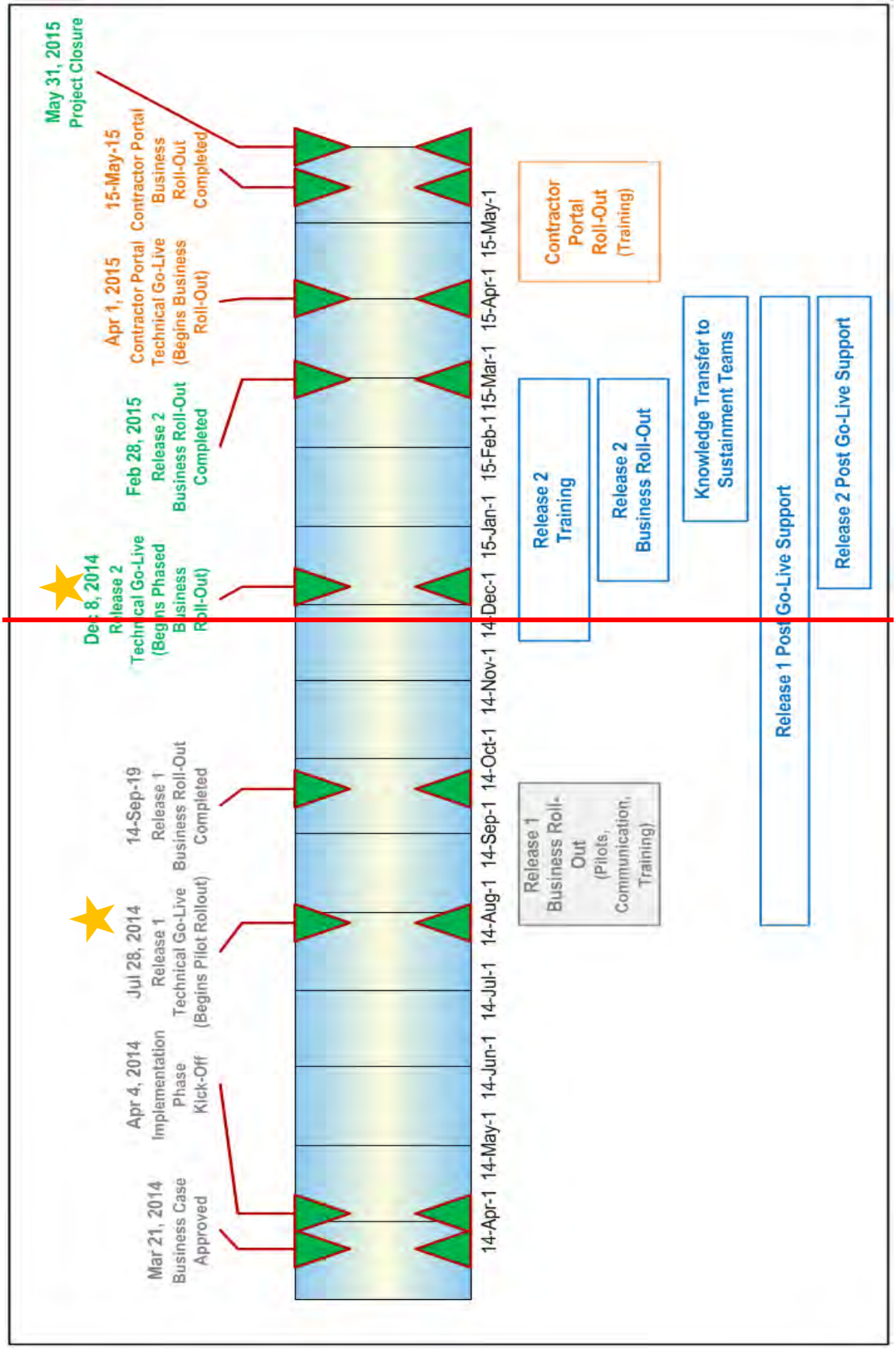
Project Timeline



Key Deliverable Summary

Link to ITDSP

Deliverable	Tailoring M=Mandatory Y= TailorIn N= Tailor Out	Sign Off / Approval Authority	Doc. Location Link to location on HydroShare Project Site	Status In Progress Ready for Review Approved	Project Notes For PM and Reviewers use
Tailored ITDSP Variant	M	Stoicescu, Laura	Link ITDSP_Variant.xlsx	Approved	Further tailored for Implementation December Go Live
Updated Statement of Objectives (for Implementation)	M	Baker, Bryan	Link Business Case	Approved	See Implementation Business Case signed March 17, 2014
Project Charter	N	NA	NA	NA	
Detailed Designs: Functional Specifications, Configuration documents, Technical Specifications	M	Ben Setiawan / Myra Cayme (Functional Design Sign off required by SAP functional leads)	Functional Specifications are in SAP Solman (links to Solman are available in SharePoint)	Ready for Review	- Functional design for key development items have been reviewed with various solution leads - Functional team will provide final update to the functional specifications and configuration documents after the Dec 8 go-live
		Nada Kovacevic (Technical Design Sign off required by SAP tech lead)	Link SAP DWS Phase 2 – Architecture Design Document (DAD)	Ready for Review	ADD was sent to Neil Rerup and Salman Shahid for their review and sign-off on Nov 16
			Technical Design Documents in SAP Solman	In Progress	Technical team will provide final update to the technical specifications before Dec 8 go-live
Key Design Decisions (KDDs)	M	Martell, Wayne	Link Decisions KDD	Approved	Steering Committee provided directions for the KDD's
Requirements Traceability Matrix	M	John Kapalka	Link Requirement Traceability Matrix	Ready for Review	Requirements are linked to development items and test scenarios

Key Deliverable Summary

Link to ITDSP

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FOR GENERATIONS

Deliverable	Tailoring M=Mandatory Y= TailorIn N= Tailor Out	Sign Off / Approval Authority	Doc. Location Link to location on HydroShare Project Site	Status In Progress Ready for Review Approved	Project Notes For PM and Reviewers use
RACA - Detailed Control Worksheets (DCWs)	Y	Wynne, Michael	Link RACA Detailed Control Worksheet	Ready for Review	No net new financial controls in Release 2. Added six financial controls previously excluded from the Release 1 RACA and they were tested as part of Release 1. Finance has no concern.
RACA - Test of Controls (TOCs)	Y	Wynne, Michael		NA	TOC is now part of the Detailed Control Worksheets (DCWs)
PIA Final	Y	McDonald, Scott	Link DWS Release 2 PIA Link Line Monitor PIA	Ready for Review	FOICO identified privacy risks. Business is accepting the privacy risks.
Test Plan	Y	Baker, Bryan	Link Test Plan	Approved	UAT underway, , scheduled to complete on Nov 28
Test Report	Y	Baker, Bryan	DWS_Release_2_Integraton_Test_Summary_Report	In Progress	- Addressing critical defects before go-live - Project team continues to resolve outstanding defects based on severity and priority during stabilization period - Final update to Test Report will be completed shortly after UAT is completed on Nov 28 and prior to Dec 8 go-live
Defect Log	**M**	Baker, Bryan	Link Defect Tracker	Approved	Defect tracker and triage process in place to monitor defects
Process Design	**M**	Jodi Somerville	Link Processes for December Go Live	Ready for Review	- Presented Release 2 process impacts at the Sep 30 Process Governance Committee - Several process owners preferred to sign off after UAT is completed - Higher priority updates to be applied prior to go-live, minor edits to be applied by Dec 15

Key Deliverable Summary

Link to ITDSP

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Deliverable	Tailoring M=Mandatory Y= TailorIn N= Tailor Out	Sign Off / Approval Authority	Doc. Location Link to location on HydroShare Project Site	Status In Progress Ready for Review Approved	Project Notes For PM and Reviewers use
Change Implementation Plan	Y	Watt, Daniel	Link Change Plan	Approved	Approved by Daniel Watt
Training Plan	M	Watt, Daniel	Link Training Plan Link Training Calendar	Approved	Training for Customer Connect underway from Nov 18 to Nov 28
Training Material	Y	John Kapalka, Doug Juby	Link Training Materials, Job Aids & FAQ's	In Progress	Training materials need to be updated in December after UAT & go-live have been completed.
UAT Sign Off	Y	Martell, Wayne	Link UAT DWS_Testing_Status	In Progress	UAT sign-off no later than Dec 3
Operational Readiness Assessment (including outstanding items)	M	Baker, Bryan	Link Operational Readiness Assessment	In Progress	Evaluating go-live and operational readiness on a weekly basis until Dec 5
Cutover Plan (approved and tested)	M	Baker, Bryan	Link Cutover Plan	Ready for Review	- Dry Run completed - DWS cutover plan has been merged with the overall SAP EHP7 cutover plan
Service Introduction Plan	M	Setiawan, Ben	Link Service Introduction Plan Link Change Plan Support.docx	Ready for Review	- Service Introduction Plan completed - Reviewed Knowledge Transfer approach with various support teams - Knowledge transfer to occur from January to March 2015
Production Turnover Documentation	M	Setiawan, Ben	Link Development Inventory	Ready for Review	Documentation will be turnover to the sustainment teams during the project stabilization period

Key Deliverable Summary

Link to ITDSP

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Deliverable	Tailoring M=Mandatory Y= TailorIn N= Tailor Out	Sign Off / Approval Authority	Doc. Location Link to location on HydroShare Project Site	Status In Progress Ready for Review Approved	Project Notes For PM and Reviewers use
Risk Register	**M**	Baker, Bryan	Link Risk Register	Approved	Risk register in place and reviewed periodically
Status Report	**M**	Baker, Bryan	Link to Technology PMO site	Approved	Status reports on PMO site
Project Level Change Notice	**Y**	Baker, Bryan	Link Project Level Change Notice	Approved	All PLCN's have been approved by project sponsors
Project Completion and Evaluation Report	**M**	Project sponsor			This deliverable will be completed in May 2015 when the Contractor Portal has been implemented.
Other deliverables appropriate to the nature of the project can be tailored in.			Link to location on HydroShare Project site		

Operational Readiness & Assessment

Link to Operational Readiness & Assessment

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	Report for Week Starting	Person Responsible	20-Oct	27-Oct	3-Nov	10-Nov	17-Nov	24-Nov	1-Dec	
1	**Design Stability**									**Comments**
1.1	Open Issues impacting Design refer to Issues log as needed impacting Dec go live	David: Obtained from issues log								3 opened issues: Reporting Impacts, Obtain EAR revision for Contractor Portal and to address potential budget shortfall Link to Issue Record
1.2	Open Decisions impacting Dec Go Live	David: Obtained from Decisions Log								Outanding decisions with low impact to Dec 8 go-live: #47 Need a business group to take ownership for ongoing Work Centre updates #45: Daily Field Completion of DC ESOs by FSAs #43 Import / Export of SAM files from Contractor Portal #23 Digital Work Orders (designed)
1.3	Security Vulnerability	Bryan Baker								Review / sign-off for the Architecture Design Document (ADD) underway Link SAP DWS Phase 2 - Architecture Design Document (ADD)

Operational Readiness & Assessment

Link to Operational Readiness & Assessment

	Report for Week Starting	Person Responsible	20-Oct	27-Oct	3-Nov	10-Nov	17-Nov	24-Nov	1-Dec	
2	**Technical Quality**									
2.1	Test Scripts Written	David Jenkins								Some test scripts are expected to be modified during integration testing and UAT
2.2	Test Scripts Executed IT1	David Jenkins	15%	56%	77%	100%	100%	100%		IT1 completed on Nov 16
2.3	Test Scripts Executed IT2 & Regression Testing	David Jenkins	not started	not started	5%	28%	64%	69%		- IT2 started in the week of Nov 3 (1 week behind schedule). Plan for IT2 to continue and in parallel with UAT until Nov 28. - 95% passed
2.4	UAT Test Scripts Executed	David Jenkins	not started	not started	not started	not started	31%	47%		- UAT started on Nov 17 (until Nov 28) - 88% passed
2.5	Opened Defect Arrival Trend	David Jenkins	52	61	70	95	86	81		Number of opened defects have decreased
2.6	Open "Critical" defects (Very High showstoppers)	Obtained from Defects Log	2	1	6	19	10	8		- Critical defects must be fixed before go-live - All critical defects are expected to be resolved before go-live
2.7	Open "Major" defects (High Priority)	Obtained from Defects Log	18	32	35	35	49	35		Prioritization with the business to determine which High Severity defects must be resolved immediately after the Dec 8 go-live and also during the post go-live stabilization period
2.8	Open "Minor" defects (other than High Priority)	Obtained from Defects Log	32	55	29	41	27	38		Open minor defects will be fixed during stabilization period
2.9	Security Test	David Jenkins								Security role testing completed
2.10	Performance Test Results	David Jenkins	not started	not started	not started	not started				Resolving performance issuesfor PS394, WM094, WM103, WM026 PassPort interface
2.11	User acceptance test recommendation	John Kapalka	not started	not started	not started	not started	not started	not started		Expect UAT sign-off no later than Dec 3
2.12	Privacy Impact Assessments	Darlene Henry								- 2 PIA's (DWS R2 and Line Monitors) have been reviewed by FOICO, addressing identified privacy risks. - David Lebeter prepared to sign-off the privacy risks

Operational Readiness & Assessment

Link to Operational Readiness & Assessment

	Report for Week Starting	Person Responsible	20-Oct	27-Oct	3-Nov	10-Nov	17-Nov	24-Nov	1-Dec	
3	**Data Quality / Conversion Readiness**									
3.1	Data Cleansing	John Kim								- On track, target completion date is Dec 1 - Some data cleansing works are aligned with the business rollout schedule, i.e. they will be completed prior to the rollout to the areas
4	**Stabilization Preparation**									
4.1	Support Model defined, Sustainment group staffed as needed.	David Wong								- Presented draft transition and knowledge transfer plan to the 3rd tier sustainment teams and 2nd tier BAS team. - Knowledge transfer will occur in January until March 2015, BAS team has been invited to training sessions - Information Sheet has been updated for 1st tier Help Desk (Telus)
4.2	Project team stabilization roles assigned	David Wong								- Refer to 4.1 Support Model - Project team has been supporting Release 1 since July 28 - Project team continues to resolve outstanding defects based on severity and priority during stabilization period
4.3	Incident Handling / Escalation documentation in place	David Wong								Refer to 4.1 Support Model
4.4	End User Training Materials prepared	Belinda Spear								- Training Plan approved - Training material for Customer Connect completed - Plan to update the Field Ops (Scheduling) training material after Dec 8 go-live
4.5	End User Training delivered	Belinda Spear								- Express Connect training sessions underway (Nov 18 - 28) - Training for Design Connect, HQ Schedulers, Contract Managers in December. More training sessions for DMC and Schedulers in January and February.
4.6	Outage notices (if any) confirmed, accepted and communicated ?	David Wong	NA	NA	NA	NA	NA	NA		- Outage notices will come from the SAP EHP7 Upgrade project - DWS business stakeholders will be informed as part of the DWS Communication Plan
4.7	Backup & recovery in place	NA	NA	NA	NA	NA	NA	NA		- Not applicable: it will be handled as part of the SAP EHP7 Upgrade cutover plan

Inquiry of Expenditures related to the adoption of the SAP Platform

Page 18 of 23

BCUC IR 1.10.7.1 Attachment 3

Operational Readiness & Assessment

Link to Operational Readiness & Assessment

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	Report for Week Starting	Person Responsible	20-Oct	27-Oct	3-Nov	10-Nov	17-Nov	24-Nov	1-Dec	
5	**Process Checkpoints**									
5.1	Production Cutover Plan identified & confirmed	Tanya Peachey								Cutover dry-run completed on Nov 7 on X05. Cutover plan has been merged with the EHP7 Master Cutover Plan.
5.2	Production Cutover Plan execution	Ben Szeto (SAP EHP7) / Tanya Peachey (DWS)	not started	not started	not started	not started	not started	not started		- Pre-cutover activities (data conversion) will be started in the week of Dec 1 - Production system transports and more data conversion steps will occur at 12:30 pm on Dec 7 after EHP7 upgrade has been completed. - Additional data conversion steps will occur after the Dec 8 go-live
5.3	IT DSP Go Live Gate Review	David Wong	not started	not started	not started	not started	not started	not started		- IT DSP Gate Review to be held on Nov 26 - Deliverables such as functional config documents, process maps, tech design specs will need to be updated after the Dec 8 go-live
6	**Organizational Readiness**									
6.1	External Cutover Dates Communication Delivered	Belinda Spear								Not applicable for Dec 8 go-live
6.2	Internal Cutover Dates Communication Delivered	Belinda Spear								As per DWS Communication Plan: - DPPD: 1st email on Nov 28, reminder email on Dec 5 - FOLT (M3s): Dec 1. Email to be sent after Dec 8 go-live, reminder email on Dec 5
7	**Governance**									
7.1	Code / Configuration Freeze	David Wong (DWS)								- Daily CCB started on Nov 10 (only address High and Very High severity defects) - Plan for a project code / config freeze at the end of November (after UAT is completed)
7.2	Steering Committee Go/No-Go	David Wong (DWS)	not started	not started	not started	not started	Scheduled	Scheduled		Steering Committee meeting on Nov 28 @ 1:00 pm has been scheduled
7.3	Integration Team Go/No Go	David Wong (DWS)	not started	not started	not started	not started	not started	not started		- Go/No Go is coupled with the SAP EHP7 Upgrade project. Approval to go-live to be determined at the Dec 4 Solution Alignment meeting. - Customer System must be operational on Dec 8.
7.4	Final Go/No-Go for Cutover (Business Approval)	David Wong (DWS)	not started	not started	not started	not started	not started	not started		Go/No-Go decision conference call (meeting) to be held on Dec 7 after the required cutover steps and the business verifications have been completed
7.5	Confirmation of No Rollback	David Wong (DWS)	NA	NA	NA	NA	NA	NA		Rollback is not an option. System issues encountered during cutover must be resolved.

Business Rollout Plan

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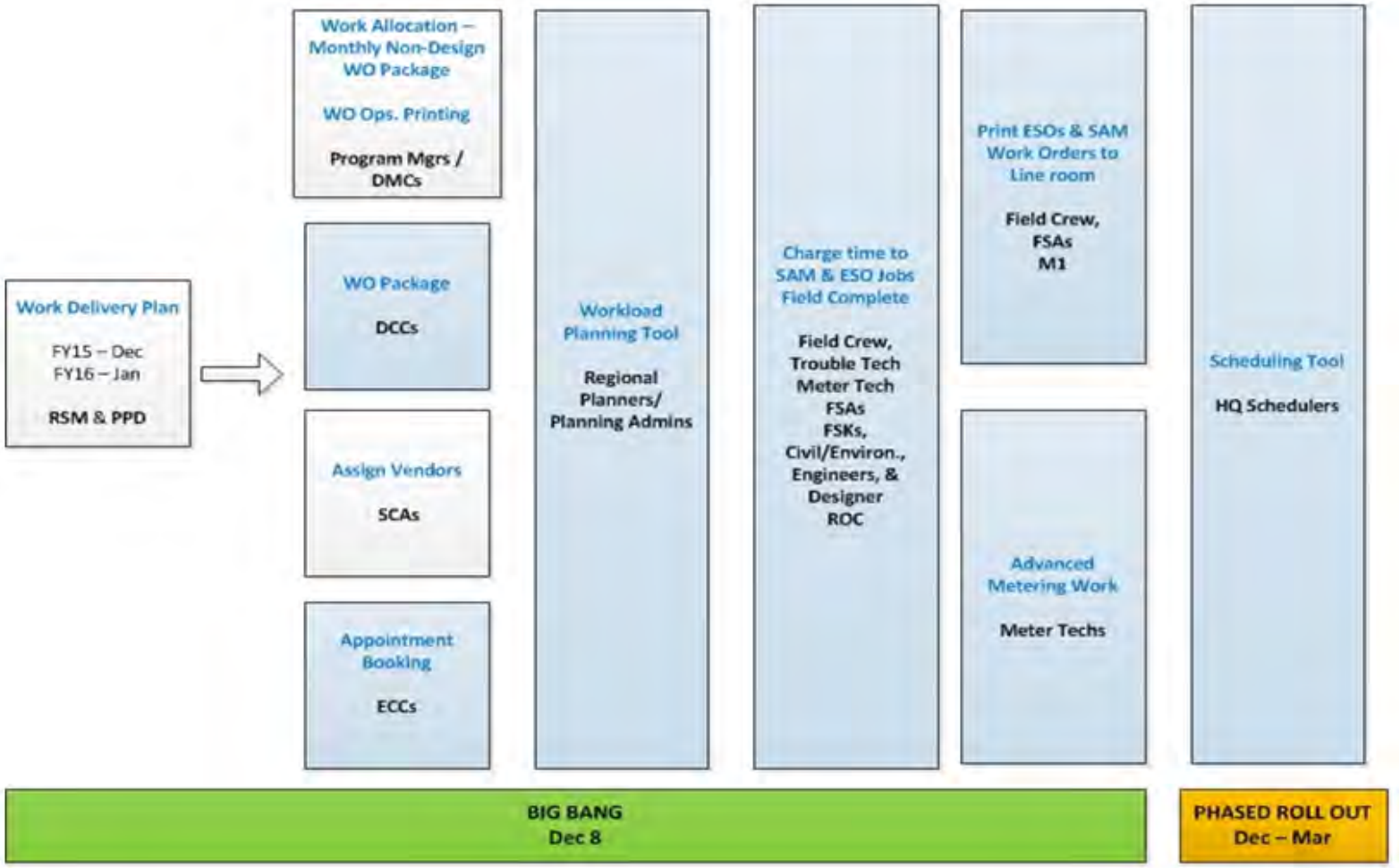

Inquiry of Expenditures related to the adoption of the SAP Platform
Page 20 of 23
BCUC IR 1.10.7.1 Attachment 3

Phased Scheduling Rollout Plan

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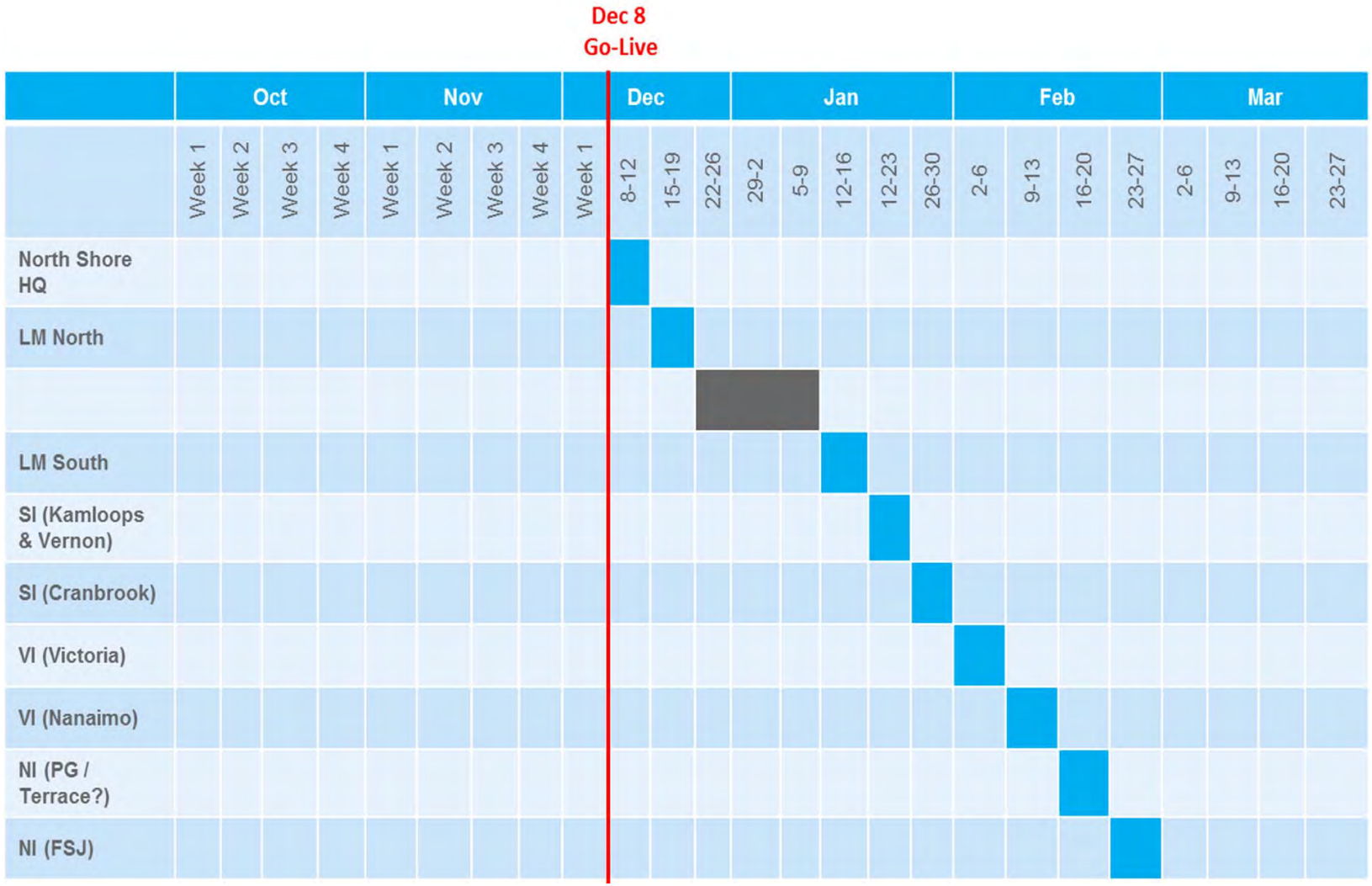

Cutover Milestones

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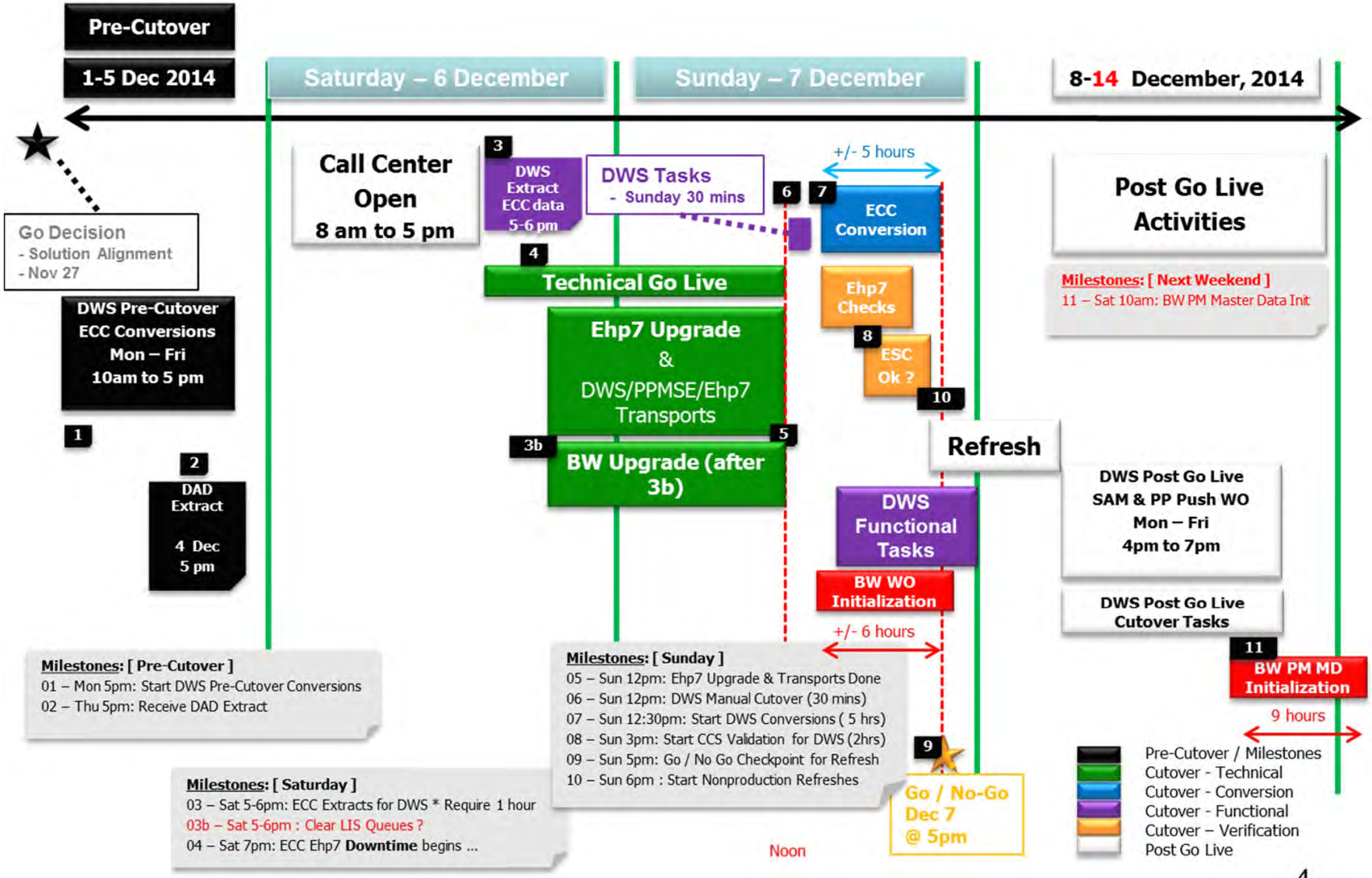

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Inquiry of Expenditures related to the adoption of the SAP Platform
Page 22 of 23
BCUC IR 1.10.7.1 Attachment 3

Post Go-Live Stabilization Plan

- Post go-live stabilization period: Dec 8, 2014 to March 31, 2015
- Support processes during stabilization period defined
- Leverage existing support processes
  - Tier 1 Help Desk (Telus 71444)
  - Tier 2 Business Support Desk
  - Tier 3 DWS Project Team / Enterprise Application Support Teams
  - ITSM ticket (routed to ATS SAP EAM group)
- Knowledge transfer Plan in place
  - Updated Information Sheet to be provided to Tier 1 Help Desk (Telus)
  - Tier 2 Business Support Desk analysts to attend user training sessions
  - Knowledge transfer sessions to be scheduled with Tier 3 Sustainment Analysts in January 2015 and target to complete by February 2015
- Steering Committee approved the recommendation to create a Stabilization Work Program

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Technology PMO – ITDSP Gate Review Meeting Minutes
YT-00402 Distribution Work Scheduling (Contractor Portal)

Project Details		
Date	2015-06-10	
Project Code	YT-00402	
Project Name	Distribution Work Scheduling (Contractor Portal)	
Gate	Gate 4 Go Live Approval	
Key Reviewers	**Name**	**Notes**
Technology PMO	Thalia MacIsaac, Anda Tudor	
Enterprise Architecture - Technology	Salman Shahid	
Enterprise Architecture - Process	Christine Griffiths	
FOICO	Scott MacDonald	
Generation Finance	Claudia Moniz De Sa	Over the phone
Generation Finance	Matt Jones	Representing Henry Honda
Finance Processes & Controls	Maria Tannenbaum	Not present
Cyber Security	Ruth Godfrey	Feedback sent by email
Project Specific Reviewers		
Technology T&D Business Lead	Dan Boucher	
Technology Application Owner	Ben Setiawan	
Technology Enterprise Applications Lead	Enn Kiudorf	Not present
Technology Application Sustainment Lead	Ben Setiawan	Over the phone
SAP Technology and Mobility Manager	Nada Kovacevic	Not present
Project Team		
Project Manager	Bryan Baker	

Gate Review Slide Deck

DWS_PMO_Release_
3_Go-Live_Gate_Rev

Previous Gate 3 – Conditions

See Conditions from Gate 3 here.
See conditions from Release 1 Gate 4 Go Live here.
See conditions from Release 2 Gate 4 Go Live here.

Gate 4 – Go Live Approval – Key Discussion Points

See slide deck for details on the project background, scope and objectives.

Project Background Summary:

- Overall project objectives have not changed. Two main objectives - to see all work orders from Passport, SAM, SAP, PowerOn, etc. in SAP (in one place) and to have all the relevant attributes (location, date, type of work, crew and ISD) on every Work Order.
- This project was split in 3 releases:
  - **Release 1** – Enable Basic Distribution Work Scheduling: have one system to see all work orders from Passport, SAM, SAP, PowerOn, etc. in one place. It went Live on July 28, 2014.
  - **Release 2** – A new and enhanced tool set for end users who perform work allocation,

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and new scheduling transaction screen. It went live on December 8, 2014.

- **Release 3** – This is the Contractor Portal, to be rolled out in 2015, as it was not feasible to complete this work with the Dec 8, 2014 roll out.

Project Objective (Contractor Portal release):

- Allow external 'Line' contractors (up to 50 users) to see, accept, and complete work packages.
- Enhance the document management system by providing the ability to attach documents directly to the work order. The attachment can be added at the header and at the task level. The attachments are stored in FileNet.
- Enable Electric Service Orders updates (customer records and meter information related to a particular ESO)

Implementation Results:

- Ben Setiawan confirms that the contractor portal software is reasonably scalable and can be expanded to other departments if necessary.

Schedule:

- UAT: June 8-22
- Contractor Portal Go Live: June 22
- Training: Jun – Jul 2015. The training is scheduled for both internal (admin) and external users. Stabilization: Jun 22 – Aug 30

Gate 4 Go Live Approval Specific Deliverables	Status	Notes
Detail Design for Contractor Portal	Ready for review	**Condition 1:** To obtain approval from Nada K and Ben Setiawan for Detail Design deliverable.
Requirements Traceability Matrix	In progress	
Process Design	Conditionally approval	**Condition 2:** To complete the following activities: • Outstanding procedural issue to be resolved prior to Go Live. (Allocation of concrete or blazed poles - who a contractor calls if they can't do a work order because of pole type). • Process maps to be updated, approved and published prior to Go Live date of June 22, 2015. • PDDs to be published late June or early July prior to Sustainment Handover.
PIA	Conditionally approval	**Condition 3:** PM to obtain PIA approval. PM to include in the PIA the off-boarding procedure for the token the vendor will receive to use the Contractor Portal system.
Training & Training Material	In progress	The training sessions are scheduled. The training materials are in progress. The users are going to be onboarded as soon as the training is completed.
Sustainment Plan	Ready for review	The Sustainment teams (team leads Ben Setiawan and Lisa Williams) are scheduled to take the project on at the end of Aug 2015. There are resource challenges in Lisa Williams's sustainment support team that might affect this project. This has been raised as an issue

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		and will be addressed separately. The DWS project team is ready to support the Contractor portal release.
Test Plan	Approved	
Test report	In progress	UAT is still in progress and approval is required for go live.
Defect Log	In progress	A number of high level major defects and 3 show stopper logged. UAT is still in progress.
UAT Signoff	In progress	**Condition 4:** To obtain UAT signoff.
Change Management Approach	Ready for review	
Cutover Plan	Reviewed & Tested	
Operational Readiness	Red	**Condition 5:** The critical defect is a showstopper an d a required fix is necessary for go live. • **Major defects:** there are 13 major defects open (the team didn't find yet a workaround for them); 43 either closed now or are in the QA environment ready to deploy. It was agreed only a maximum of 10 major defects would be open at Go Live with business approval related work around or an acceptable time to be fixed for them needs to be in place. • **Critical defects**: 1, related to Citrix upload on IE11. Resolution is required for Go Live (resolved and scheduled for testing).
System performance		PM confirms that the user experience is good and there are no issues with running work orders queries concurrently by multiple users.

Action Items	**Assigned To**
PM to obtain Ben S and Nada K confirmation to go live with open defects (if any).	Bryan Baker
PM to send the business confirmation for go live to PMO and updates for Go Live conditions prior to go live.	Bryan Baker
Outcome	**CONDITIONAL PASS. See conditions listed above.**

ITDSP Gate Review

PROJECT ID & NAME: YT-00402 Distribution Work Scheduling

Project Phase: IMPLEMENTATION

Project Manager: Bryan Baker

Date: 10 June, 2015

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AGENDA

- Project Objectives
- Scope overview
- Project Timeline
- IT DSP Go-Live Gate Review – Release 3 (June 22 Go-Live)
  - Key Deliverable Summary - ITDSP
  - Operational Readiness & Assessment
  - Post Go-Live Stabilization Plan

Inquiry of Expenditures related to the adoption of the SAP Platform
Page 5 of 13
BCUC IR 1.10.7.1 Attachment 4

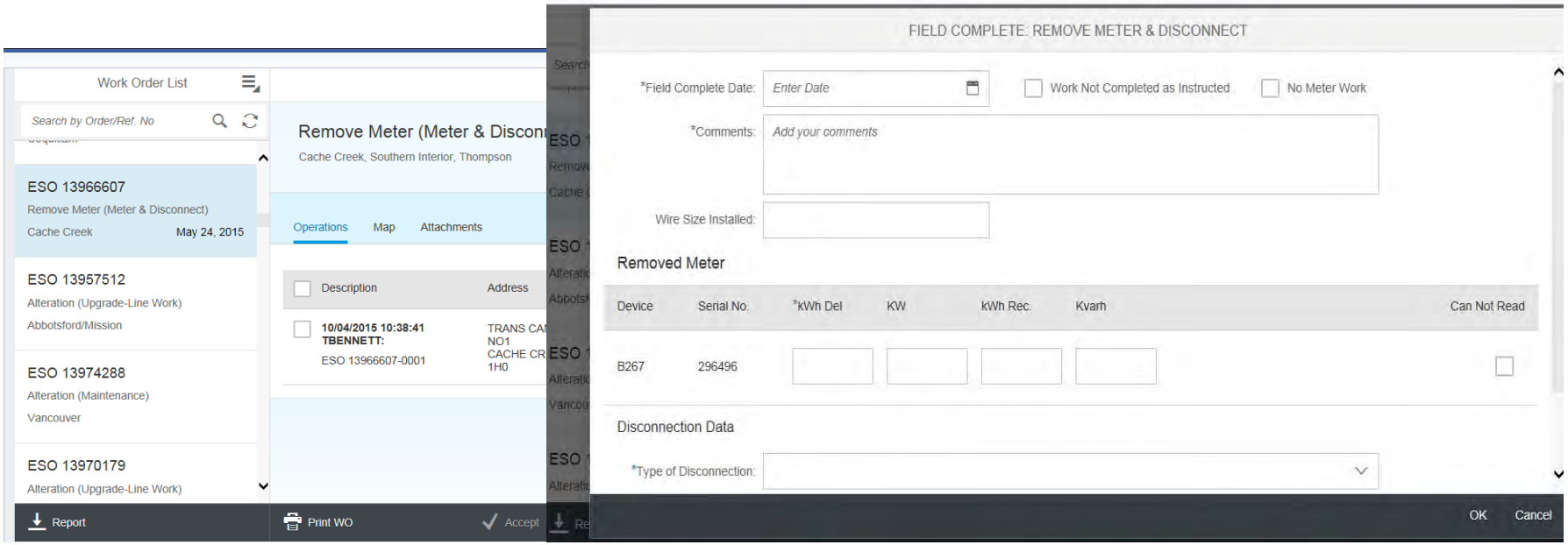
Project Objectives

- Enable Basic Distribution Work Scheduling
  - Ensuring all work is available and visible within one system will enhance the ability for the Distribution Scheduler to produce a forward looking work schedule, which optimizes productivity for each headquarters
  - Allowing Distribution Schedulers to ensure crews have the right type of work and are as productive as possible
  - Improve crew productivity and efficiency
  - Improving reporting

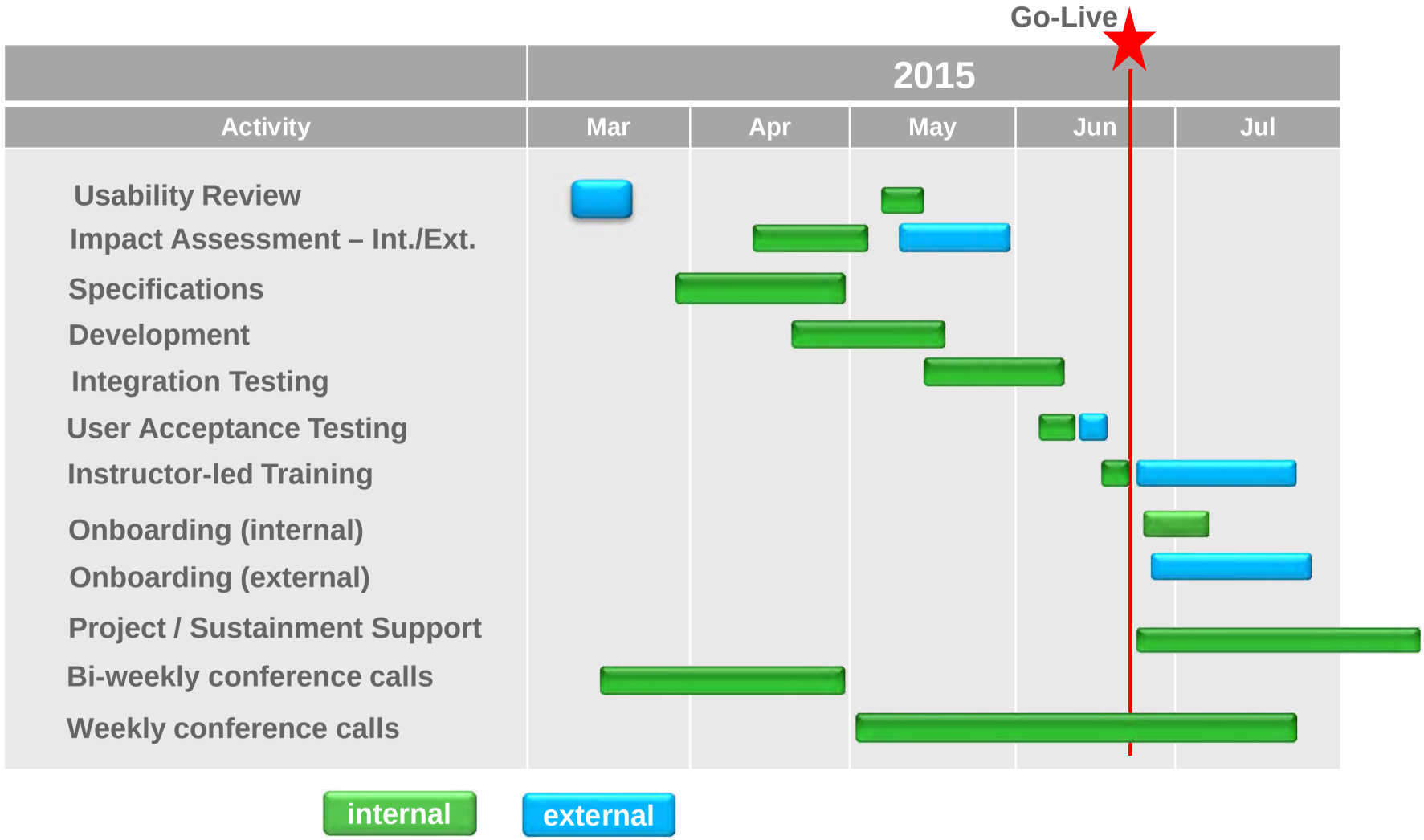
- Enhance Project / Program Management Capabilities
  - Enhancing the ability to manage and report on projects and programs (i.e. the annual fiscal capital and OMA programs)
  - Enabling greater success in delivering work programs according to plan with forward looking visibility to dollars and units allowing for more dynamic, in-year program course correction

Scope – Release 3

- Contractor Portal
  - Deploy a ‘Contractor Portal’ that allows external ‘Line’ contractors to see, accept, and complete work.
  - Implement a post-processing system to update service orders, customer records and meter information related to Electric Service Orders (ESOs)
  - Update document management system within SAP to provide new document management features for work management.



Project Timeline



Key Deliverable Status

Deliverable	Reviewer/Approver	Notes
Functional Design	Ben Setiawan	Review in progress
Technical Design	Nada Kovacevic	Review in progress
Process Design	Sandy Bergum, T&D Process Governance	Conditional approval
RACA	Grace Mok	Approved (exemption granted)
PIA	Scott McDonald (Bradley Chow)	Review in progress
Change Management Plan	Daniel Watt	Review in progress
Training Plan	Business (Darlene Blackall)	Approved
Test Plan	Bryan Baker	Approved
Service Introduction and Production turnover material	Ben Setiawan	Ready for review
Operational readiness		[see next slides]

Operational Readiness

Project Number (SAP) Project Name	Distribution Work Scheduling - Readiness Checklist and Assessment					
Report for week ending: Report Issued/Updated:	05-Jun-15					
	Notes: to be maintained/updated in the weeks leading up to ITDSP Go Live Gate Review and Go/No Go Steering					
	Some checklist items may not apply to the project, others may need to be added - Project Managers to use profe					
	Select Green, Yellow or Red fill for the cells as appropriate to reflect status.					
Week starting	22-May	29-May	5-Jun	12-Jun	19-Jun	
Current Overall Rating						
Design Stability						**Comments**
Open Issues impacting Design refer to Issues log as needed)						No issues impacting Go Live
Open decisions impacting Contractor Portal Go live						Decision to combine doc management enhancement and contractor portal release
Security Vulnerability						Meeting with security on June 3
Technical Quality						
E2E Test Scripts Written	100%	100%	100%			
E2E Cycles Test Scripts Executed IT1	0%	100%	100%			All test scripts completed IT1, defects logged
E2E Cycles Test Scripts Executed IT2	not started	on track	17%			Planned for June 1, delayed 1 week
Negative Testing executed	0%	in progress	in progress			Within IT1 and IT2
UAT Test Scripts Written	not started	100%	100%			
UAT Test Scripts Executed	not started	on track	on track			Planned June 9 to June 11
Open Defect Arrival Trend	26	21	17			21 New defects for Contractor Portal logged last week. Less than last week
Open "Critical" defects (showstoppers)	0	1	3			uploading documents to Contractor Portal Defaulting unplanned at detail level Printing ESO
Open "Major" defects (High Priority)	18	31	56			majority of major are ready for testing in QA environment

Operational Readiness (cont'd)

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Week starting	22-May	29-May	5-Jun	12-Jun	19-Jun	
Current Overall Rating						
Open "Minor" defects (other than High Priority)	8	9	4			
Regression Test	not started	in progress	in progress			
Performance Test Results	not started	not started	in progress			planned June 8
User acceptance test recommendation	not started	not started	not started			Expected after UAT.
U/X Design Review	Complete	Complete	Complete			Usability test conducted in March and May.
Security Scan						
Security Test	not started	on track	slightly behind			Security Roles tested in IT2 & UAT. Also specific sign on script
Privacy Impact Assessments	1	1	1			PIA reviewed. One outstanding issue addressed.
Data Quality / Conversion Readiness						
Data Cleansing	not started	scope of cleansing evaluation	Require vendor go live sequence			Included in cutover plan
Data migration (if applicable)	on track	on track	on track			Conversion test script written and executed

Operational Readiness (cont'd)

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Week starting	22-May	29-May	5-Jun	12-Jun	19-Jun	
Current Overall Rating						
Stabilization Preparation						
Support Model defined, Sustainment group staffed as needed.	in progress	in progress				Ben's team is staffed. BAS does not have staffing, need to work something out.
Project team stabilization roles assigned	not started	not started				
Train the Trainer Sessions/End User Training sessions	not started	on track				Scheduled
End User Training	not started	on track				Scheduled
Outage notices (if any) confirmed, accepted and communicated ?	not started	not started				
Backup & recovery in place	not applicable	not applicable				
Incident Handling / Escalation documentation in place	not started	not started				
Process Checkpoints						
Production Cutover Plan identified & confirmed	on track	on track	on track			
Production Cutover Plan execution	not started	not started	not started			
IT DSP Go Live Gate Review	not started	not started	not started			Scheduled June 10
Organizational Readiness						
External Cutover Dates Communication Delivered	not started	not started	not started			
Internal Cutover Dates Communication Delivered	not started	not started	not started			

Stabilization / Sustainment Plan

- Go-live stabilization period: June 22, 2015 to Aug 14, 2015
- DWS Helpdesk to take calls/emails during stabilization
- Transition to ‘standard’ support processes during stabilization period, pending resource availability
- Leverage existing support processes during sustainment
  - Tier 1 Help Desk (Telus 71444)
  - Tier 2 Business Support Desk
  - Tier 3 DWS Project Team / Enterprise Application Support Teams
  - ITSM ticket (routed to ATS SAP EAM group)
- Knowledge transfer plan in progress
  - Updated Information Sheet to be provided to Tier 1 Help Desk (Telus)
  - Tier 2 Business Support and Tier 3 Enterprise Apps teams have attended process and solution overviews

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Technology PMO – ITDSP Gate Review Meeting Minutes
YT-00402 Distribution Work Scheduling

Project Details	
Date	2015-10-14
Project Code	YT-00402
Project Name	Distribution Work Scheduling
Gate	Sustainment Handover Review
Key Reviewers	**Name** **Notes**
Technology PMO	Laura Stoicescu
Enterprise Architecture - Technology	Lucas Malesku
Enterprise Architecture - Process	Christine Griffiths
FOICO	Scott MacDonald
Generation Finance	Claudia Moniz De Sa
Finance Processes & Controls	Maria Tannenbaum Not present
Cyber Security	Ruth Godfrey
Project Specific Reviewers	
Technology T&D Business Lead	Dan Boucher
Technology Application Owner	Ben Setiawan
Technology Enterprise Applications Lead	Enn Kiudorf
Technology Application Sustainment Lead	Ben Setiawan
SAP Technology and Mobility Manager	Nada Kovacevic
Project Team	
Project Manager	Bryan Baker

Gate Review Slide Deck

Previous Gate 4 – Conditions

- **Condition 1: Detail Design for Contractor Portal. *Completed.*** Ben confirming that Functional and Technical Specification docs are approved in Solution Manager.
- **Condition 2: Process Design**. Some PDDs and processes were updated; but they cannot be fully resolved until the work program is done. **The remaining PDDs are formally transitioned to Sustainment to Bryan Baker as the Tech Program Mgr for T&D, committing to address with Technology and business as appropriate.**
- **Condition 3: PIA. *Completed.***
- **Condition 4: Service Introduction Plan. *Partially completed.*** Awaiting Lisa Williams to sign off on the BAS team role.
- **Condition 5: ORT. *Completed.*** Condition addressed via acceptance by the business, with a plan in place to resolve the issues.
- **Condition 6: Obtain UAT sign off. *Completed.***
- **Condition 7: System Performance. *Completed.*** Performance improvements made during rollout stand down.

Sustainment Handover Review – Key Discussion Points

See slide deck for details on the project background, scope and objectives.

Project Background Summary:

- The project had 2 main objectives - to see all work orders from Passport, SAM, SAP, PowerOn,

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etc. in SAP (in one place) and to have all the relevant attributes (location, date, type of work, crew and ISD) on every Work Order.

- This project was split in 3 releases:
  - **Release 1** – Enable Basic Distribution Work Scheduling: have one system to see all work orders from Passport, SAM, SAP, PowerOn, etc. in one place. It went Live on July 28, 2014.
  - **Release 2** – A new and enhanced tool set for end users who perform work allocation, and new scheduling transaction screen. It went live on December 8, 2014.
  - **Release 3** – The Contractor Portal was rolled out in 2015.

Project Results:

- Release 2 went live in Dec 2014 and required extensive stabilization effort because of the very complex solution. Defects list peaked at 250 (60 high priority). There were business change management challenges (primarily due to large business changes - hundreds of users affected across T&D&CS from 35 different stakeholder groups).
- DWS Helpdesk was successfully established and is operating well. The DWS Helpdesk as first staffed with project team members and currently with Ben's team and the enhancement work program team.
- Release 3 (Contractor Portal) went live in June 2015; on-boarded 50 users from 11 different vendors. The functionality was delivered to users via Citrix. The solution overall works; only 1 critical defect is open and it will be transferred to the work program. As results, the system is pushing out thousands of work orders to vendors and 30-60 per day are completed in SAP.

Schedule:

- Release 1 go live: July 28, 2014
- Release 2 go live: Dec 8, 2014
- Release 3 - Contractor Portal go live: June 22
- Stabilization: There has been a very long stabilization for this project due to the complex functionality. The project is following on with a work program.

Financials:

- Financials closures (process final payments) – expected in late October 2015

Sustainment Handover Review Specific Deliverables	Status	Notes
Process Design	Transitioned to DWS work program	Business indicated that the department is updating the process maps; he is committing to update the process maps when the work program delivers the enhancements.
PIA	Approved	
Training & Training Material		Training materials are in process to transition to business sustainer - pending SC approval.
Defect Log	Completed	• A subset of feature requests were transitioned to the work program • Sustainment team managing defects resolution already via ITSM / existing ticketing system • One outstanding major defect for the Contractor Portal release. This defect only affects a small number of users however has high visibility. Transitioning to the work program. Bryan Baker and Dan Boucher confirming acceptance of this

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		transfer.
Service Introduction Plan	Awaiting approval	Awaiting Lisa Williams to sign off on the BAS team role. **Condition 1.**
Sustainment to handover		
Support Model	Conditional approval	• The support team includes DWS Helpdesk, business, BAS, SAP sustainment team • Pending David Lebeter's approval of the proposed model for the business roles. **Condition 2**

Action Items	**Assigned To**
PM to share with Process Architecture team how will the process work be dealt with in future to prevent this unique situation of PDDs not being ready at the completion of the project.	
Outcome	**CONDITIONAL PASS. See conditions listed above.**

10.0 B. SAP-RELATED EXPENDITURES

Reference: SAP-RELATED EXPENDITURES
Exhibit B-3, Section 3.4, pp. 23-28
Transformation initiative technology projects

Appendix A, page 74 shows that the required level of approval for the DWS project was "Executive"-level approval.

1.10.7 Please confirm, or explain otherwise, that the DWS project was in compliance with BC Hydro's IT Delivery Standard Practices (ITDSP).

1.10.7.2 If not confirmed, please explain in detail the areas in which the project was not in compliance with ITDSP and why.

RESPONSE:

Given BC Hydro's response to BCUC IR 1.10.7, this question is not applicable.

11.0 B. SAP-RELATED EXPENDITURES

Reference: SAP-RELATED EXPENDITURES
Exhibit B-3: Section 3.1.1, Tables 2, 3, pp. 19-20;
Section 3.4.2.1, pp. 25-26;
Appendix A, pp. 66, 68
Supply chain

BC Hydro describes the "completion and refinement of the scope" of the Supply Chain Management project on page 26 of the Consolidated Information Filing, including the "Supply Chain Solutions Program" and the "Supply Chain Applications Project."

Appendix A, page 66 describes the Supply Chain Solutions – SAP project as follows: "This project implemented core SAP functionality for procurement, inventory, and meter management and quality management. This project, informed by the Supply Chain Management project's design blueprint, was the first, partial implementation of supply chain functionality in SAP." [emphasis added]

1.11.1 Please explain what stage BC Hydro reached with the Supply Chain Management project before the project was separated into the Supply Chain Solutions Program and the Supply Chain Applications Project.

RESPONSE:

The Supply Chain Management project reached the Definition phase prior to being placed in Deferred status at the end of F2014, and before the commencement of the Supply Chain Solutions Program and the Supply Chain Applications project.

11.0 B. SAP-RELATED EXPENDITURES

Reference: SAP-RELATED EXPENDITURES
Exhibit B-3: Section 3.1.1, Tables 2, 3, pp. 19-20;
Section 3.4.2.1, pp. 25-26;
Appendix A, pp. 66, 68
Supply chain

BC Hydro describes the "completion and refinement of the scope" of the Supply Chain Management project on page 26 of the Consolidated Information Filing, including the "Supply Chain Solutions Program" and the "Supply Chain Applications Project."

Appendix A, page 66 describes the Supply Chain Solutions – SAP project as follows: "This project implemented core SAP functionality for procurement, inventory, and meter management and quality management. This project, informed by the Supply Chain Management project's design blueprint, was the first, partial implementation of supply chain functionality in SAP." [emphasis added]

1.11.2 Please provide the design blueprint and all EARs for the Supply Chain Management project prior to the project being separated into the smaller projects.

RESPONSE:

BC Hydro confirmed with Commission staff that this IR seeks business case information similar to what was provided for the Financial Systems Replacement project in Attachments 8 and 9 of the Consolidated Information Filing.

Please refer to BC Hydro's response to DIX IR 1.16.0 for the requested documents at Attachments 138 to 141.

11.0 B. SAP-RELATED EXPENDITURES

Reference: SAP-RELATED EXPENDITURES
Exhibit B-3: Section 3.1.1, Tables 2, 3, pp. 19-20;
Section 3.4.2.1, pp. 25-26;
Appendix A, pp. 66, 68
Supply chain

BC Hydro describes the "completion and refinement of the scope" of the Supply Chain Management project on page 26 of the Consolidated Information Filing, including the "Supply Chain Solutions Program" and the "Supply Chain Applications Project."

Appendix A, page 66 describes the Supply Chain Solutions – SAP project as follows: "This project implemented core SAP functionality for procurement, inventory, and meter management and quality management. This project, informed by the Supply Chain Management project's design blueprint, was the first, partial implementation of supply chain functionality in SAP." [emphasis added]

1.11.3 Please explain the significance of BC Hydro assigning the term "program" to Supply Chain Solutions and the term "project" to Supply Chain Applications. Please explain the difference, if any, in the meaning of the two terms.

RESPONSE:

The Supply Chain Solutions Program is a group of related projects managed in a coordinated manner as described in section 1.3 of BC Hydro's Project Management Guidelines for IT Projects at Attachment 18 of the Consolidated Information Filing.

A project is a specific initiative or one-time undertaking which has an assigned scope, schedule and cost. In certain cases, for business or technical reasons, it may be more efficient or effective to manage a group of similar projects together under a program to achieve overall coordination, and to obtain benefits and control not possible from managing the projects individually. The projects generally have a common business driver and/or technical characteristics.

11.0 B. SAP-RELATED EXPENDITURES

Reference: SAP-RELATED EXPENDITURES
Exhibit B-3: Section 3.1.1, Tables 2, 3, pp. 19-20;
Section 3.4.2.1, pp. 25-26;
Appendix A, pp. 66, 68
Supply chain

BC Hydro states on page 26: "Approximately $4.8 million in costs…was transferred from the Supply Chain Management project to each of the four projects above based upon the proportion of design blueprint work used in each project with the remaining Supply Chain Management capital costs held in a work-in-progress (WIP) account."

1.11.4 Prior to the Supply Chain Management project being separated into multiple smaller projects, what was the total Authorized Cost for this project?

RESPONSE:

The total authorized amount for the Supply Chain Management project was $14.2 million before the project was placed in 'Deferred' status and before the cost transfers to three projects, as reported in BC Hydro's response to BCUC IR 1.11.4.1.

Please refer to BC Hydro's response to BCUC IR 1.9.3.

11.0 B. SAP-RELATED EXPENDITURES

Reference: SAP-RELATED EXPENDITURES
Exhibit B-3: Section 3.1.1, Tables 2, 3, pp. 19-20;
Section 3.4.2.1, pp. 25-26;
Appendix A, pp. 66, 68
Supply chain

BC Hydro states on page 26: "Approximately $4.8 million in costs…was transferred from the Supply Chain Management project to each of the four projects above based upon the proportion of design blueprint work used in each project with the remaining Supply Chain Management capital costs held in a work-in-progress (WIP) account."

1.11.4 Prior to the Supply Chain Management project being separated into multiple smaller projects, what was the total Authorized Cost for this project?

1.11.4.1 How much of this Authorized Cost was allocated to other projects? Please specifically identify each project and the amount (SAP-related or non-SAP-related) to which the original authorized costs have been allocated.

RESPONSE:

Authorized costs are approved on a project by project basis and are not transferrable.

Approximately $4.8 million of actual expenditures were transferred from the Supply Chain Management project to the smaller projects. The projects that received the transfers and the respective amounts are identified in the table below.

Project Name	Transfer Amount ($ million)	SAP-Related
Supply Chain Solutions – SharePoint	**3.1**	**No**
Supply Chain Solutions - SAP	**1.7**	**Yes**
Supply Chain Solutions - Meters	**0.04**	**Yes**
Supply Chain Solutions - PassPort	**0.0**	**No**

11.0 B. SAP-RELATED EXPENDITURES

Reference: SAP-RELATED EXPENDITURES
Exhibit B-3: Section 3.1.1, Tables 2, 3, pp. 19-20;
Section 3.4.2.1, pp. 25-26;
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Supply chain

BC Hydro states on page 26: "Approximately $4.8 million in costs…was transferred from the Supply Chain Management project to each of the four projects above based upon the proportion of design blueprint work used in each project with the remaining Supply Chain Management capital costs held in a work-in-progress (WIP) account."

1.11.4 Prior to the Supply Chain Management project being separated into multiple smaller projects, what was the total Authorized Cost for this project?

1.11.4.2 Please provide the capital cost amount which is being held in WIP.

RESPONSE:

The capital cost in WIP related to the Supply Chain Management project is $7.3 million. The balance in WIP is net of a write-off of $2.1 million as noted in Table 3 of the Consolidated Information Filing.

BC Hydro intends to transfer the $7.3 million to the SCA project upon approval to proceed with the project.

11.0 B. SAP-RELATED EXPENDITURES

Reference: SAP-RELATED EXPENDITURES
Exhibit B-3: Section 3.1.1, Tables 2, 3, pp. 19-20;
Section 3.4.2.1, pp. 25-26;
Appendix A, pp. 66, 68
Supply chain

BC Hydro states on page 26: "Approximately $4.8 million in costs…was transferred from the Supply Chain Management project to each of the four projects above based upon the proportion of design blueprint work used in each project with the remaining Supply Chain Management capital costs held in a work-in-progress (WIP) account."

1.11.5 Who approved the transfer of costs from the Supply Chain Management project to the smaller supply chain projects?

RESPONSE:

The decision to transfer the costs was made by the Project Initiator and Project Sponsor of the projects receiving the cost transfers.

The EAR documents for the respective projects, including the cost transfers, were approved at the appropriate FAAP level.

11.0 B. SAP-RELATED EXPENDITURES

Reference: SAP-RELATED EXPENDITURES
Exhibit B-3: Section 3.1.1, Tables 2, 3, pp. 19-20;
Section 3.4.2.1, pp. 25-26;
Appendix A, pp. 66, 68
Supply chain

When describing the Supply Chain Solutions Program on page 26, BC Hydro states that it completed four stand-alone projects in 2014: Supply Chain Solutions (SAP), Supply Chain Solutions (SAP – Meters), Supply Chain Solutions – PassPort, and Supply Chain Workspace, which is in Microsoft Sharepoint.

Appendix A, page 66 describes the Key Outcomes of the Supply Chain Solutions – SAP project as follows: "Implemented improved tools for data governance, and core SAP functionality for procurement, materials, and electric meters inventory for better oversight and control…Implemented inventory management and purchasing functionality for electric meters in SAP…"

Appendix A, page 68 describes the Key Outcomes of the Supply Chain Solutions – SAP Meters as follows: "Implemented a more streamlined and integrated process for meter purchasing, receipt of electric meters, and returns of electric meters…Created electric meter records in SAP with attributes required to support billing of customers…"

1.11.6 Please clearly explain why BC Hydro treated the Supply Chain Solutions – SAP project and the Supply Chain Solutions – SAP Meters project as stand-alone projects.

RESPONSE:

The SCS – SAP and the SCS – Meters projects were managed as separate projects due to the different scope, business processes and stakeholders associated with the projects; however, the projects were managed using a coordinated approach under a program to ensure the project interdependencies and risks were managed effectively. Please refer to section 1.3 of BC Hydro's Project Management Guidelines for IT Projects at Attachment 18 of the Consolidate Information Filing for a description of a 'project program through which a group of related projects is managed in a coordinated manner.

While the SCS - SAP project included implementing inventory management and purchasing functionality for electric meters and other scope elements like Master Data Governance in SAP, the SCS - Meters project replaced an end of life custom built application called the Meter Processing System (MPS) with SAP's meter management module. Electric meters have additional information related to them

that must be loaded into the billing system (SAP) in order to correctly calculate a customer's consumption. The MPS system was responsible for managing the receipt of new meters and creating those meters in the billing system with all the required information. MPS was replaced with functionality in SAP, which when combined with the scope from the SCA - SAP project, reduced the number of systems supporting the process from three (SAP, PassPort, MPS) to one (SAP).

11.0 B. SAP-RELATED EXPENDITURES

Reference: SAP-RELATED EXPENDITURES
Exhibit B-3: Section 3.1.1, Tables 2, 3, pp. 19-20;
Section 3.4.2.1, pp. 25-26;
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Supply chain

When describing the Supply Chain Solutions Program on page 26, BC Hydro states that it completed four stand-alone projects in 2014: Supply Chain Solutions (SAP), Supply Chain Solutions (SAP – Meters), Supply Chain Solutions – PassPort, and Supply Chain Workspace, which is in Microsoft Sharepoint.

Appendix A, page 66 describes the Key Outcomes of the Supply Chain Solutions – SAP project as follows: "Implemented improved tools for data governance, and core SAP functionality for procurement, materials, and electric meters inventory for better oversight and control…Implemented inventory management and purchasing functionality for electric meters in SAP…"

Appendix A, page 68 describes the Key Outcomes of the Supply Chain Solutions – SAP Meters as follows: "Implemented a more streamlined and integrated process for meter purchasing, receipt of electric meters, and returns of electric meters…Created electric meter records in SAP with attributes required to support billing of customers…"

1.11.7 Please provide all EARs and Business Cases for both the Supply Chain Solutions – SAP project and the Supply Chain Solutions – SAP Meters project.

RESPONSE:

Please refer to BC Hydro's response to DIX IR 1.16.0 for the requested Supply Chain Solutions – SAP project documents at Attachments 143 to 145.

Please refer to BC Hydro's response to DIX IR 1.16.0 for the requested Supply Chain Solutions – SAP Meters project document at Attachment 151.

11.0 B. SAP-RELATED EXPENDITURES

Reference: SAP-RELATED EXPENDITURES
Exhibit B-3: Section 3.1.1, Tables 2, 3, pp. 19-20; Section 3.4.2.1, pp. 25-26;
Appendix A, pp. 66, 68
Supply chain

When describing the Supply Chain Solutions Program on page 26, BC Hydro states that it completed four stand-alone projects in 2014: Supply Chain Solutions (SAP), Supply Chain Solutions (SAP – Meters), Supply Chain Solutions – PassPort, and Supply Chain Workspace, which is in Microsoft Sharepoint.

Appendix A, page 66 describes the Key Outcomes of the Supply Chain Solutions – SAP project as follows: "Implemented improved tools for data governance, and core SAP functionality for procurement, materials, and electric meters inventory for better oversight and control…Implemented inventory management and purchasing functionality for electric meters in SAP…"

Appendix A, page 68 describes the Key Outcomes of the Supply Chain Solutions – SAP Meters as follows: "Implemented a more streamlined and integrated process for meter purchasing, receipt of electric meters, and returns of electric meters…Created electric meter records in SAP with attributes required to support billing of customers…"

1.11.8 Please provide the same information in the same format as has been provided for "SAP-related" projects in Appendix A for the (i) Supply Chain Solutions – PassPort project and the (ii) Supply Chain Workspace project.

RESPONSE:

Please refer to the tables below for the requested information for the two projects that are not SAP-related.

(i) Project Name: Supply Chain Solutions – PassPort	
Capital & Initiative Operating Cost: $0.6 million	**Project Close Date: F2016**
Development Phase: Completed	**Filing Reference:** BC Hydro's response from April 8, 2016 to BCUC IR 1.2.1.
Description: The project implemented enhancements to PassPort to provide short-term operational benefits pending completion of the Supply Chain Applications project.	
Issues Addressed: • Implemented reporting improvements to improve the visibility to materials; • Enhanced the interface to Ariba (eCommerce) e.g., Invoice status; and • Improved the functionality of the system including menus and contract change types.	

Supply Chain Solutions - PassPort									
$ thousand		F09	F10	F11	F12	F13	F14	F15	F16
Current Status as of December 31, 2015									**Complete**
Developmental Stage if not Completed as of December 31, 2015									
Project Name Change (if Applicable)									
Total Final Capital Cost (in fiscal year completed)									584
Total Final Operating Cost (in fiscal year completed)									0
Actual Capital Expenditures per year								574	10
Actual Operating Expenditures per year								0	-
Actual Capital Additions per year								574	10
Forecast remaining capital expenditures if not completed									
Forecast Total Capital Cost Stated in RRA	RRA Filing							F15/F16 RRA	
	Forecast Total Capital Cost ($ million)							N/A	
Total Authorized Cost per Business Case	Development Stage							IMP	
	Total Cumulative Authorized (Cap & Opex)							728	
Level of Approval Required								Mgmt	

(ii) Project Name: Supply Chain Solutions – SharePoint

Capital & Initiative Operating Cost: 8.7 million	**Project Close Date: F2016**
Development Phase: Completed	**Filing Reference:** BC Hydro's response from April 8, 2016 to BCUC IR 1.2.1.

Description:

The project developed an Enterprise Content Management (ECM) system to manage Supply Chain documents and records relating to Category Management, Sourcing, Contract Management, and Infrastructure Projects business functions.

Issues Addressed:

- Created a new system to manage Supply Chain documents and records;
- Implemented new interfaces to BC Hydro's records repository – FileNET; and
- Developed workflow to streamline related processes and improve usability.

Supply Chain Solutions - Sharepoint									
$ thousand		F09	F10	F11	F12	F13	F14	F15	F16
Current Status as of December 31, 2015									**Complete**
Developmental Stage if not Completed as of December 31, 2015									
Project Name Change (if Applicable)									
Total Final Capital Cost (in fiscal year completed)									7,908
Total Final Operating Cost (in fiscal year completed)									757
Actual Capital Expenditures per year							3,184	4,757	(33)
Actual Operating Expenditures per year							489	268	-
Actual Capital Additions per year								7,941	(33)
Forecast remaining capital expenditures if not completed									
Forecast Total Capital Cost Stated in RRA	RRA Filing								
	Forecast Total Capital Cost ($ million)								
Total Authorized Cost per Business Case	Development Stage						IMP	IMP	
	Total Cumulative Authorized (Cap & Opex)						8,382	8,666	
Level of Approval Required							Exec	Exec	

11.0 B. SAP-RELATED EXPENDITURES

Reference: SAP-RELATED EXPENDITURES
Exhibit B-3: Section 3.1.1, Tables 2, 3, pp. 19-20;
Section 3.4.2.1, pp. 25-26;
Appendix A, pp. 66, 68
Supply chain

When describing the Supply Chain Solutions Program on page 26, BC Hydro states that it completed four stand-alone projects in 2014: Supply Chain Solutions (SAP), Supply Chain Solutions (SAP – Meters), Supply Chain Solutions – PassPort, and Supply Chain Workspace, which is in Microsoft Sharepoint.

Appendix A, page 66 describes the Key Outcomes of the Supply Chain Solutions – SAP project as follows: "Implemented improved tools for data governance, and core SAP functionality for procurement, materials, and electric meters inventory for better oversight and control…Implemented inventory management and purchasing functionality for electric meters in SAP…"

Appendix A, page 68 describes the Key Outcomes of the Supply Chain Solutions – SAP Meters as follows: "Implemented a more streamlined and integrated process for meter purchasing, receipt of electric meters, and returns of electric meters…Created electric meter records in SAP with attributes required to support billing of customers…"

1.11.9 If BC Hydro had treated the four Supply Chain Solutions Program projects as one project, what would the total authorized cost and the total actual cost have been?

RESPONSE:

The total of adding all authorized expenditures (capital and operating) of the four projects together equals $19.6 million, and the total of actual costs equals $19.1 million. The four projects were stand-alone projects due to the individual objectives, business processes and stakeholders unique to each project.

12.0 B. SAP-RELATED EXPENDITURES

Reference: SAP-RELATED EXPENDITURES
Exhibit B-3, Section 3.1.1, Table 3, p. 20
SAP-related project initiative expenditures – write-offs

1.12.1 Please clarify if the costs associated with the projects listed as "cancelled" in Table 3 have been written off.

RESPONSE:

The capital expenditures reported in Table 3, which total $9.7 million, have been written off.

12.0 B. SAP-RELATED EXPENDITURES

Reference: SAP-RELATED EXPENDITURES
Exhibit B-3, Section 3.1.1, Table 3, p. 20
SAP-related project initiative expenditures – write-offs

1.12.2 Please explain if the costs which have been written off will still be recovered from ratepayers.

RESPONSE:

No. The costs which have been written off will not be recovered from ratepayers in the future.

13.0 C. BC HYDRO APPROVAL AND OVERSIGHT CONTROLS AND PROCESSES

Reference: SAP-RELATED EXPENDITURES
Exhibit A2-2, Tab Z, pp. 12-13
Financial systems replacement project business case – June 2009

BC Hydro states the following on page 9 of the Financial Systems Replacement Project Business Case dated June 2009 which was filed as Tab Z in Exhibit A2-2:

IT Savings / Efficiencies: Although the initial project investment is larger than that what was originally estimated for a PeopleSoft re-implementation, once fully implemented the SAP ERP will result in a simplified IT landscape that will enable a reduction in total IT spending that would not otherwise be achievable in a complex multi-ERP environment…

… The anticipated reduction in future IT spending associated with a single vendor IT environment (the SAP solution) relates to lower future costs for development, sustainment, and maintenance of BC Hydro's enterprise applications. It is also expected that the new SAP systems will have minimal customization which will in-turn lower the ongoing development and sustainment costs. The potential savings will increase as BC Hydro commits to invest in future phases of the SAP program as these future phases will ultimately combine with this Project to create a fully integrated IT environment.

1.13.1 Please describe the metrics and/or measures put in place by BC Hydro to support the above statements regarding the anticipated reduction in future IT spending.

RESPONSE:

The primary measures are financial budgets and associated expenditure controls related to Enterprise Resource Planning (ERP) operating costs. The key points are as follows:

- **Consolidation of the ERP platform is enabling BC Hydro to maintain its application support budgets at approximately the same level as in prior years, while increasing functionality and support to the business;**

- **BC Hydro's total ERP related operating costs in fiscal 2009 were $13.6 million, and these costs increased to $15.4 million by fiscal 2016. However, actual expenditures have remained relatively consistent when adjusted for inflation (approximately 12 per cent from 2009 to 2016 according to Bank of Canada);**

- **ERP-related operating costs as a percentage of overall application support-related operating costs have declined from 50 per cent to 47 per cent between fiscal 2009 and fiscal 2016. Please refer to the table that follows below;**

- **BC Hydro has essentially contained its ERP-related operating costs while simultaneously increasing the scope of the ERP functionality deployed. The extent of the business functionality implemented in fiscal 2016 is greater than the fiscal 2009 footprint, which is reflective of the ongoing need for more business automation and functionality. Greater scope is being supported while costs have remained stable indicating an IT support productivity benefit. Furthermore, since the scope of the ERP applications in fiscal 2016 is greater, this indicates that operating cost benefits are being achieved elsewhere in the organization due to automation (although these benefits are not being tracked). Please also refer to BC Hydro's response to BCUC IR 1.13.2; and**
- **The new ERP solutions are more extensive than the systems that were replaced. For example, the Project & Portfolio Management solution has much greater capabilities for scheduling, forecasting and reporting, while the EMPower HR solution has extensive new capabilities to support recruiting and self-service business processes.**

Given the complexity and challenges BC Hydro faced with its earlier "Best of Breed" environment in fiscal 2009, BC Hydro management believes that consolidation on SAP has been successful from both operating cost containment and productivity perspectives. It is BC Hydro's view that continuing to use multiple ERPs (including continuing with PeopleSoft for Financials) would have been more costly over the long term given the technical and business complexities.

The table below provides the actual operating expenditures incurred from fiscal 2009 to fiscal 2016 for SAP, ERP and non-ERP application support, and also shows the relative percentage of ERP support costs versus the total support costs for both ERP and non-ERP applications. Please note that operating costs include application maintenance, minor enhancements, and software maintenance (annual payments to vendors such as SAP, Ventyx, and Oracle).

Application Support Costs - Actual ($'s in million)	F2009	F2010	F2011	F2012	F2013	F2014	F2015	F2016
ERP: SAP related	4.2	4.2	5.9	9.8	12.5	11.3	13.3	12.6
ERP: non-SAP related	9.4	8.1	5.4	4.8	4.2	3.8	2.5	2.8
Total ERP	13.6	12.3	11.3	14.6	16.7	15.1	15.8	15.4
Non-ERP	13.5	14.3	10.2	8.2	11.7	15.8	18.4	17.2
Total	27.1	26.6	21.5	22.8	28.4	30.9	34.2	32.6
ERP vs. Total application support costs	50%	46%	53%	64%	59%	49%	46%	47%

13.0 C. BC HYDRO APPROVAL AND OVERSIGHT CONTROLS AND PROCESSES

Reference: SAP-RELATED EXPENDITURES
Exhibit A2-2, Tab Z, pp. 12-13
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… The anticipated reduction in future IT spending associated with a single vendor IT environment (the SAP solution) relates to lower future costs for development, sustainment, and maintenance of BC Hydro's enterprise applications. It is also expected that the new SAP systems will have minimal customization which will in-turn lower the ongoing development and sustainment costs. The potential savings will increase as BC Hydro commits to invest in future phases of the SAP program as these future phases will ultimately combine with this Project to create a fully integrated IT environment.

1.13.1 Please describe the metrics and/or measures put in place by BC Hydro to support the above statements regarding the anticipated reduction in future IT spending.

1.13.1.1 How has BC Hydro tracked and measured reductions in IT spending created by the implementation of SAP?

RESPONSE:

Please refer to BC Hydro's response to BCUC IR 1.13.1.

13.0 C. BC HYDRO APPROVAL AND OVERSIGHT CONTROLS AND PROCESSES

Reference: SAP-RELATED EXPENDITURES
Exhibit A2-2, Tab Z, pp. 12-13
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… The anticipated reduction in future IT spending associated with a single vendor IT environment (the SAP solution) relates to lower future costs for development, sustainment, and maintenance of BC Hydro's enterprise applications. It is also expected that the new SAP systems will have minimal customization which will in-turn lower the ongoing development and sustainment costs. The potential savings will increase as BC Hydro commits to invest in future phases of the SAP program as these future phases will ultimately combine with this Project to create a fully integrated IT environment.

1.13.2 Please confirm, or explain otherwise, that BC Hydro has achieved reductions in IT spending on development, sustainment, and maintenance as a direct result of implementing SAP.

RESPONSE:

As indicated in BC Hydro's response to BCUC IR 1.13.1, BC Hydro's ERP related spending is approximately the same in F2016 versus F2009 adjusted for inflation, but the functional scope supported is now larger. This is indicative of successful cost management and productivity benefits. Furthermore, consolidation of the environment and direction to simplify, standardize and integrate the IT environment has favourably impacted the management of costs through reduced sustainment effort.

BC Hydro also notes that while its ERP systems have been reduced from five to two, it continues to operate the PassPort ERP system (for Supply Chain and Work Management) alongside its core SAP ERP system. This implies some remaining degree of functional overlap and cost redundancy, and represents a future opportunity.

13.0 C. BC HYDRO APPROVAL AND OVERSIGHT CONTROLS AND PROCESSES

Reference: SAP-RELATED EXPENDITURES
Exhibit A2-2, Tab Z, pp. 12-13
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1.13.2 Please confirm, or explain otherwise, that BC Hydro has achieved reductions in IT spending on development, sustainment, and maintenance as a direct result of implementing SAP.

1.13.2.1 If confirmed, please provide supporting evidence to substantiate these reductions and, in particular, the spending reductions' correlation to the implementation of SAP.

RESPONSE:

Please refer to BC Hydro's response to BCUC IR 1.13.1.

13.0 C. BC HYDRO APPROVAL AND OVERSIGHT CONTROLS AND PROCESSES

Reference: SAP-RELATED EXPENDITURES
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1.13.3 Please describe BC Hydro's current process for defining and identifying expected outcomes such as the IT Savings/Efficiencies described in the FSR Project Business Case. Please also describe the types of supporting evidence used today to qualify and quantify expected benefits.

RESPONSE:

BC Hydro's current process for defining IT&T project outcomes and benefits is informed by the business case document templates (see section 6 of Attachment 14 of the Consolidated Information Filing).

A business case template is required to be used for IT&T projects and includes direct and indirect benefits tables. For each direct benefit the following are described: beneficiary, cost savings, timing of benefit, responsibility to measure the benefit, and the measurement approach/metric. Indirect benefits are related to risk reductions or other criteria, and also include an achievement plan.

Positive business benefits can be offset by the operational cost (base OMA) of sustaining a new system or business function, which must be described by the business case.

Implementation phase business cases include a table of Implementation Success Criteria tying project scope to the direct benefits that are expected, and again noting the expected monetary benefit, net of increases to operating costs, and when the benefit will start creating value.

13.0 C. BC HYDRO APPROVAL AND OVERSIGHT CONTROLS AND PROCESSES

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1.13.4 Please explain who under BC Hydro's current policies and procedures is accountable for reviewing and verifying the accuracy of statements made in business cases regarding expected benefits/savings, etc…

RESPONSE:

The Project Initiator is responsible for reviewing the accuracy of statements made in business cases and the Project Sponsor is accountable.

Under current policies and procedures, and as noted in the Project Management Guidelines for IT Projects (refer to Attachment 18 of the Consolidated Information Filing, sections 2.2 and 2.3):

- **Project Sponsor responsibilities are to "a*ssume ultimate authority over and responsibility for the project, the operationalization of the project's outcomes and the benefits realization;***

- **The Project Initiator shall "a*dvocate, enable and verify project outcomes and benefits realization as project solutions are introduced and then operationalized by BC Hydro's business groups*"; and**

- **The Project Initiator is responsible to "*develop the project statement of objectives or business case as appropriate for each Phase on behalf of the Sponsor."***

13.0 C. BC HYDRO APPROVAL AND OVERSIGHT CONTROLS AND PROCESSES

Reference: SAP-RELATED EXPENDITURES
Exhibit A2-2, Tab Z, pp. 12-13
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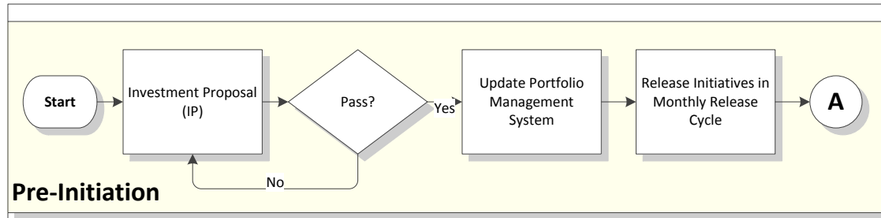
1.13.4 Please explain who under BC Hydro's current policies and procedures is accountable for reviewing and verifying the accuracy of statements made in business cases regarding expected benefits/savings, etc…

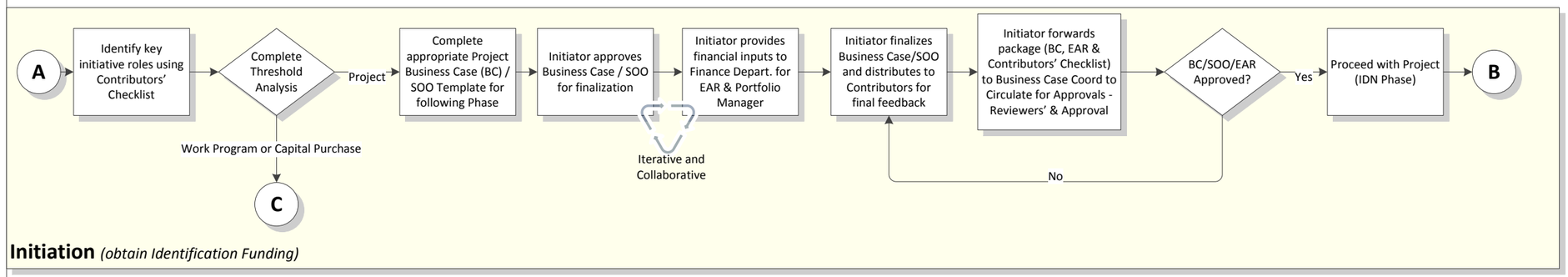
1.13.4.1 Does BC Hydro have either a formal or informal validation process that is followed prior to the publication of business cases? If there is a formal process, please provide the relevant BC Hydro policy/guideline. If no formal process exists, please explain why not and describe any informal validation processes which are in place.

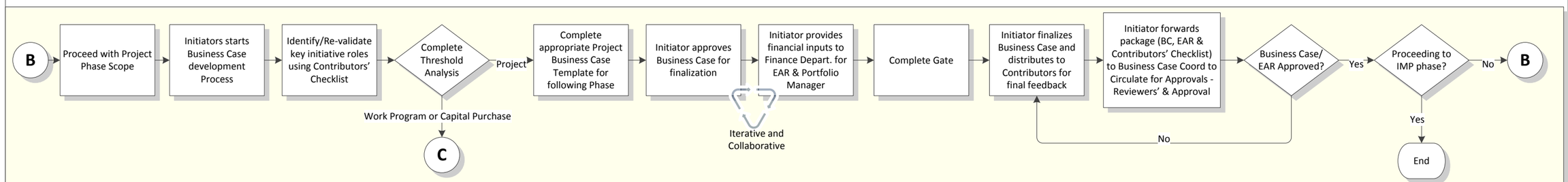
RESPONSE:

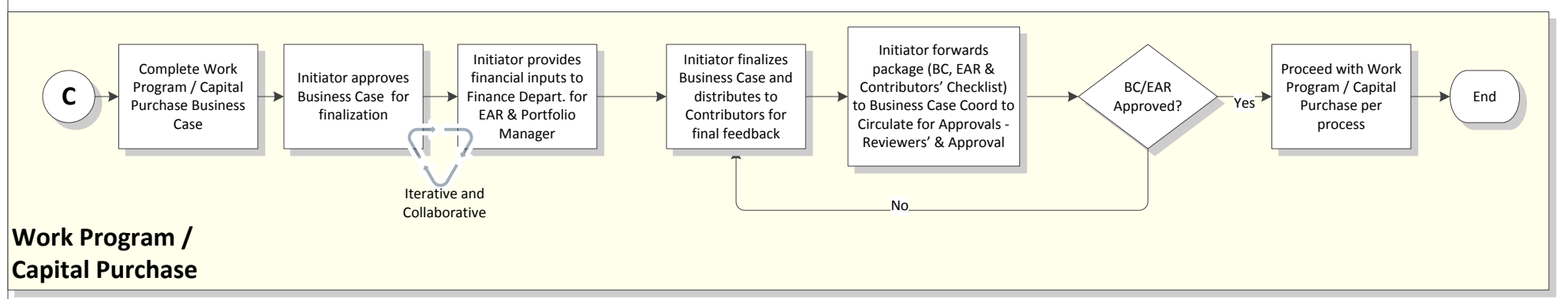
For Technology business cases there is a Technology Business Case Authorship and Approval Process and a Technology Business Case Guide. The current versions of these documents are attached, although BC Hydro is in the process of updating them. Together, these documents provide guidance for the Project Initiator to follow with respect to development, review, and approval of business cases. In addition, a business case contributor's checklist is used to ensure the appropriate reviewers are identified. Finally, as part of the required review by the Finance group, an investment evaluation review is performed.

Technology Business Case Authorship and Approval Process









February 2016, Version 2.0

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Technology Business Case Guide

- Business Case Guidance -

Date: 2016.05.10
Version: V2.2

bchydro.com

Technology Initiative Funding Guide

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Document History

Version	Date	Author	Notes
v1.1	2016.01.11	R Harper	Document inception
v1.2	2016.01.24	R Harper	Edits. RACI Update. Minor amendments.
v2.0	2016.02.01	T MacIsaac	Incorporated minor updates from training sessions and updated version for February release
v2.1	2016.02.01	R Harper	Completed TMI suggested amendments
V2.2	2016.05.10	T MacIsaac	Updated diagrams, work flow details, and contributors' checklist, roles section

Introduction

Welcome to the world of BC Hydro Technology initiative funding. Over the past few years Technology has been increasing the rigour around its funding processes. This Guide will be helpful for Initiators and other Business Case authors.

Purpose

The purpose of this Guide is to provide instruction regarding how to request Technology funding for a Technology <$20M initiative. If your initiative is projected to be >$20M, please use this Guide in conjunction with BCH Regulatory Department and investment guidelines.

How this Guide is Organized

The following can be found in this document:

- Getting Started: "How To…"
- Roles: Who is important to Business Case creation, review, and approvals
- Choosing the appropriate Business Case or SoO template:
  - The Threshold Analysis
- Completing the Business Case:
  - Risk Assessment Guide
  - Tips for writing a strong document
- FAQ
- Business Case Authorship Process

Note: This Guide will not guarantee a high quality, compelling document that will trigger funding, rather it is designed to guide the reader through the Technology investment process.

Who should use this Guide

Any BCH employee or contractor who is involved with an IT proposal or initiative requiring Technology funding will find this guide useful.

INITIATORS of BCH Technology initiatives will find this Guide to be especially helpful.

Technology Initiative Funding Guide

Getting Started

If you are using this Guide, you need to do one of the following:

1) Need to convert an idea you have into an accepted Technology Initiative	→ Go to Getting Started: Investment Proposal
2) You have an Accepted Initiative (A project) with a completed Investment Proposal and you need to fund its Identification (IDN) phase	→ Go to Getting Started: Funding IDN Phase
3) You are in a Project's IDN phase and you need to fund its Definition (DEF) phase	→ Go to Getting Started: Funding DEF Phase
4) You are in a Project's DEF phase and you need to fund its Implementation (IMP) phase	→ Go to Getting Started: Funding IMP Phase
5) You have an Accepted Initiative with a completed Investment Proposal. It is considered a **Work Program (WP)** or a **Capital Purchase** (CP) and you need funding.	→ Go to Getting Started: Funding a WP or CP

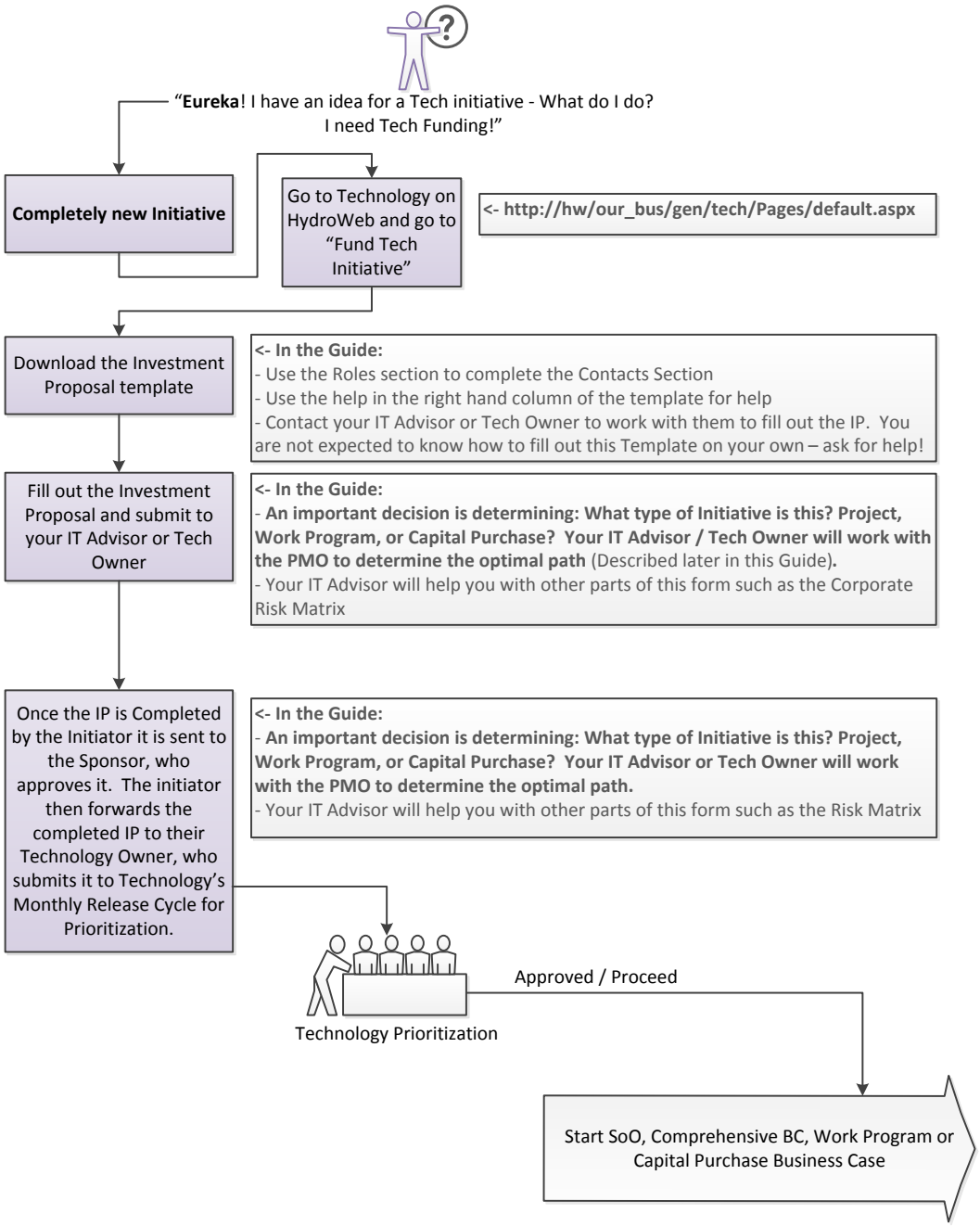
Find all business case related documentation here:

http://hw/our_bus/gen/tech/it_business_services/tech_bus_cases/Pages/default.aspx

Technology Initiative Funding Guide

Getting Started:

Investment Proposal



Technology Initiative Funding Guide

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Getting Started:

Funding a Project's IDN Phase

I am in INIT and my **PROJECT** needs a IDN Statement of Objectives - What do I do?

I am the Initiator and I am headed into IDN.

<- Initiators are RESPONSIBLE for the completion and submission of the SoO document on behalf of the Sponsor (who is Accountable). The SoO is usually used for requesting IDN funding for a **PROJECT**, but not always.

Inquire with your IT Advisor or Tech Owner. They will work with you and the PMO to determine the appropriate Business Case Template.

<- The "Threshold Analysis," is used to determine the appropriate funding template. The Threshold Analysis is complex – discuss it with your Technology Owner or IT Advisor.

The appropriate Template is now in your possession, this project has been "Released" and you have been approved by Technology to begin writing.

<- The most important thing to do at this time is to **IDENTIFY ROLES**. Go to the Guide "Roles" Section.

Draft the document. Fill in sections for which you have information.

<- Fill out the Template using the Help on the right side of the template. Interact with your Contributors to amass content. **IDEA: use a SharePoint site accessible by all Contributors.**

Complete the SoO Document Drafting and speak to Finance regarding the EAR once the costs are determined.

<- Before contacting Finance send an email to your IT Advisor and perhaps share your progress thus far on the document. You should be very close to completing the Business Case before speaking with Finance.

Complete your Business Case then request Contributors' Feedback

<- Complete the Drafting of the BC and EAR (EAR is a Finance document). **Obtain Contributors feedback and incorporate into the content.** Start the business case early in the process. Ensure all feedback is obtained from **the following Contributors BEFORE you proceed to submitting the documents for final Approval**: PMO Controls, Finance, IT Advisor, Tech Owner, Portfolio Management. Once the business package is sent to the Business Case Coordinator, it should be final. The business case package includes 3 documents – the Contributor's Checklist : 1) Business Case, 2) EAR, 3) Contributors' Checklist.

IDEA TO SPEED BUSINESS CASE: Start the business case **early!** Get all required Contributors in one room to review and obtain their input. The Initiator posts the documents on a SharePoint site, and then informs the Contributors requesting Feedback.

Submit the Documents for Approval

<- THE INITIATOR forwards the final package to Business Case Coordinator once all Contributors' feedback has been included. The Coordinator will circulate for approvals.

NOTE: Documents are expected to be final. If there are changes identified, it may rejected and go back to Reviewers and Approvers for review of the changes.

IDENTIFICATION PHASE is Funded!

Technology Initiative Funding Guide

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Getting Started:

Funding a Project's DEF Phase

I am in IDN and need a DEF Business Case. What do I do?

I am currently in the Identification Phase and I need Definition Funding

Inquire with your IT Advisor or Tech Owner. They will work with you and the PMO to determine the appropriate Business Case Template.

<- Check with your IT Advisor so that they can recommend the appropriate business case template. They will use the "Threshold Analysis" to assign the appropriate template to you.

The appropriate Template is now in your possession and you have been approved by Technology to begin writing.

<- The most important thing to do at this time is to IDENTIFY ROLES. Go to the section in the Guide "Roles". Confirm your Contributors using the Contributors' Checklist.

Start drafting the Business Case document.

<- Fill out the Template using the contextual Help.
<- Fill in sections for which you have information.
<- Address Alternatives (Which for DEF are primarily sourced from the Architectural Vision document). Consult with your IT Advisor regarding the Alternatives.
<- For the Risks refer to Risks section in this Guide

As much as possible, complete the Document Drafting and then speak to Finance.

<- Before contacting Finance send an email to your IT Advisor/Tech Owner and share your progress thus far on the document. Include others early as much as possible.
<- Regarding the accompanying EAR: Finance will fill this out for you, provided the appropriate info is provided.
<- Contact Finance AFTER the project's DEF costs are finalized

Pass Gate #2 Preliminary Approval (Identification Phase Completion)

Complete Business Case: Request Contributor Feedback

<- Prior to the Gate, the Author should have obtained all Feedback from the Contributors. If the Project PASSES or CONDITIONALLY PASSES the Gate, any changes identified are to be incorporated into the business case and then finalized prior to sending for the approval process. **NOTE:** There should only be minimal changes or updates to the business case at this stage. You can obtain the Contributors' Feedback by posting the BC documents on a SharePoint site.

<- The posted Business Case package should contain 3 documents: 1) Business Case 2) EAR 3) Contributor's Checklist.
<- Before proceeding to the next step: The author MUST receive Feedback from the following contributors: PMO Controls, Portfolio Management, Finance, IT Advisor and/or Tech Owner

Submit the Documents for Reviews and Approvals

<- Initiator submits the document to Business Case Approval Coordinator

DEFINITION PHASE is Funded!

Technology Initiative Funding Guide

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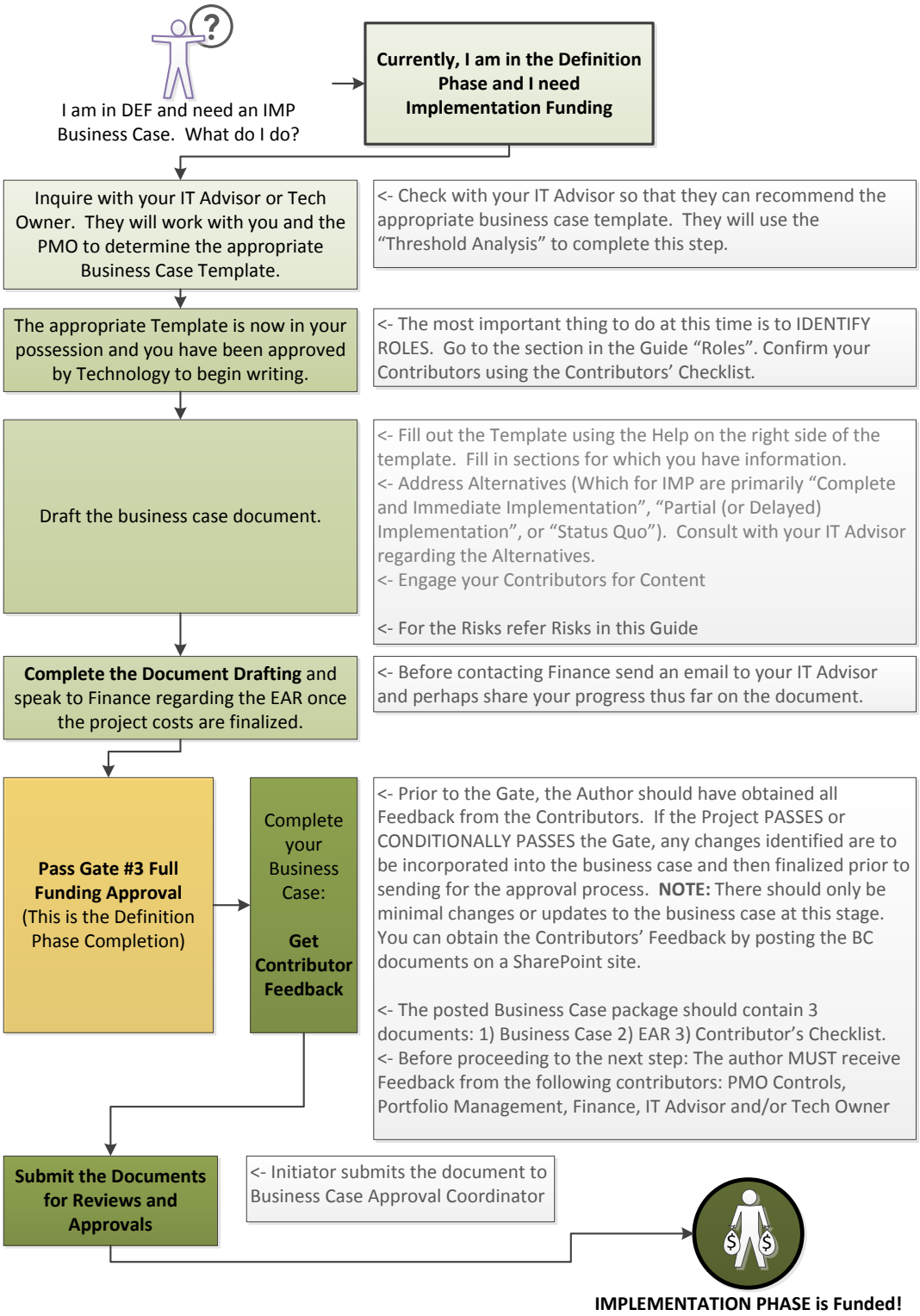
Getting Started:

Funding a Project's IMP Phase



Technology Initiative Funding Guide

BC Hydro Power smart

Getting Started:

Funding a Project's Work Program or Capital Purchase

I am in INIT and need a Work Program or Capital Purchase funded. What do I do?

I am the Initiator and my WP or CP was approved by Technology Prioritization. I want to begin actioning my request.

<- Initiators are RESPONSIBLE for the completion and submission of this document on behalf of the Sponsor.

Inquire with your IT Advisor or Tech Owner. They will work with you and the PMO to determine the appropriate Business Case Template.

<- Check with your IT Advisor or Tech Owner so that they can recommend the appropriate business case template. They will use the "Threshold Analysis" to complete this step.

The appropriate Template is now in your possession and you have been approved by Technology to begin writing.

<- The most important thing to do at this time is to IDENTIFY ROLES. Go to the Guide "Roles" (Get help from your IT Advisor). **NOTE**: For **Capital Purchase**, include Contract Management for software purchases. There is no project delivery component.

Draft the document. Fill in sections for which you have information. Consult with your Tech Advisor with questions.

<- Fill out the Template using the Help on the right side of the template.
<- Alternatives are usually "Proceed Immediately" or "Status Quo" - Your IT Advisor or Tech Owner can help with the Alternatives

Complete the WP or CP Document Drafting and speak to Finance regarding the EAR once the costs are determined.

<- Before contacting Finance send an email to your Technology Advisor and perhaps share your progress thus far on the document.

Complete your Business Case

<- Complete the Drafting of the BC and EAR. Attach the Contributor's Checklist so that your Business Case package contains 3 documents: 1) Business Case 2) EAR 3) Contributor's Checklist. The Initiator then posts the documents on the Project's SharePoint site.

Request Feedback from Contributors

<- THE INITIATOR then forwards the location of the documents to the Contributors requesting their Feedback. The Feedback from PMO Controls Reviewer, the Technology Portfolio Manager, and the Finance are all mandatory and must be received before submitting the funding request to the Business Case Coordinator. Once feedback is provided with the affirmation that this documentation can proceed for Approvals

Submit the Documents for Approvals

<- Initiator submits the document to Business Case Approval Coordinator

INITIATIVE is Funded!

Roles

In accordance with how Technology reports its initiatives to the BCUC, Business Cases are structured to reflect the Accountabilities and Responsibilities of their participants.

The following is a table of all "Business Case / Technology Initiative Funding" related roles with descriptions (Use this table to help prepare the Contributors' Checklist):

Title	Definition	F2015Q3 Examples
Sponsor	Typically a Senior Manager or Executive in the Business, **the Sponsor is Accountable** for the investment proposal, business case and the project.	Kiudorf, Anderson, Udell
Initiator	The Initiator has authority and responsibility to initiate the work. Typically, a manager within the Business, who working with the IT Advisor, **the Initiator is Responsible for developing the business case on behalf of the Sponsor**. Initiators usually work under the Sponsor's leadership within their business unit.	Stanway, Basi, Kikkert, Foster
Technology Owner	Typically a Senior Manager within the Technology group who is **Accountable** for all Technological aspects of the business case.	Kiudorf, Hardie, Siu, Morison
IT Advisor	Typically a manager within the Technology group, who working with the Initiator, is Responsible for the Technology content of the business case.	Davie, Schwab, Siu, Hardie,
Portfolio Management	Manager who is Responsible for the overall Technology Portfolio is consulted regarding the portfolio impacting aspects of the project	McDonald, Razlog
Project Delivery	Project Delivery Oversight: Typically a PMO Senior Manager is **Accountable** for the delivery of Technology projects. Project Manager: Responsible for the delivery of a project's scope within the specified cost and schedule.	Razlog Christiansen Baker
PMO Project Controls	Manager who is responsible for the implementation of the Project Controls (Such as ITDSP).	Stoicescu, Razlog
Project Manager	Responsible for the delivery of the project scope within the specified cost and schedule.	Christianson, Baker
Architecture	Manager who is Responsible for the alignment of the project to Enterprise Architecture principles.	Shahid, Malesku
Finance	Manager who is Responsible for the alignment of project costs to financial standards (IDC, accurate classification of costs to IOMA or Capital, etc.)	Siddoo, Jones, Abley
Procurement	Manager who is Accountable for the alignment of the procurement for the initiative to BCH Procurement Procedures and Standards.	

Roles – RACI Clarification

RACI for Approvers of a Business Case:

Business Case Completion Roles	Sponsor*	Tech Owner	Initiator	IT Advisor	Portfolio Mgmt	Project Delivery	PMO Proj. Controls	Architecture	Finance	Procurement
Approval	√	√				√				

* Sponsor's manager signs when Sponsor does not have FAAP Planning Authority greater than the total expected cost of the initiative.

Business Case Content RACI. The Initiator of a business case receives business case content from the Contributors. The RACI Roles are defined as follows:

R – Responsible	Identifies the person responsible for the information. In some areas, there may be more than one "R" assigned as the information might reside with multiple people.
A - Accountable	Only one A is assigned. Only person overall accountable *(answerable)*.
C – Consulted	There is an expectation to obtain feedback from this person.
I – Informed	Informational communications – no expectation of input

The RACI below is for the development of business case content. The Initiator receives business case content from the Contributors as indicated in the Business Case Content / Contributor RACI is as follows:

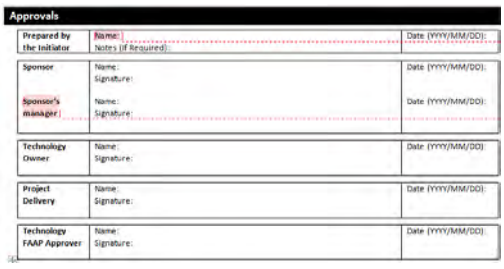
Business Case Sections	Sponsor	Tech Owner	Project Delivery	Initiator	IT Advisor	PMO Portfolio Mgmt	PMO Proj. Controls	Archi-tecture	Finance	Procure-ment
Background	A	C		R	C	C				
Problem / Opportunity	A	C		R	C	C				
Urgency	A	C		R	C	C				
Alignment to Corp Vision	A	C		R	C	C				
Assumptions, Constraints, Dependencies										
Business	A	R	R	R	R	I				
Technology	I	A	R	R	R	I		C		
Alternatives	C	A	I	R	R	I		C		
Recommended Alternative										
Project Scope	C	A		R	R	C				
Business Scope	A	R	C	R	C	I				
Technology Scope	I	A	C	C	R	I				
Delivery Approach	C	R	A	R	R	C				I
Implementation Success Criteria	C	R	A	C	R					
Risks										
Business Risk	A	C		R	C	I				
Technology Risk	I	A	C	I	R	I		C		
Project Delivery Risk	R	R	A	R	R	I				
Readiness Risk	R	R	A	R	R	I				
Resources	R	R	A	R	R	I				
Financial Request										
Project Costs	R	R	A	R	R	C	C		C	
Sustainment Costs	C	A	I	R	R	I	I		I	
Asset Retirement	C	A	I	R	R	I	I		C	
Benefits										
Direct Benefits	A	I		R	R	C			C	
Indirect Benefits	A	I		R	R	C			C	

N.B.: Business Case section headings may vary slightly from headings found in the Business Case templates

Roles – Sponsor and Initiator

Notes about Roles

- For all business cases, each initiative must have a Sponsor and Initiator. The Sponsor is the owner of the initiative (Accountability rests with the Sponsor) and business case document.
- The Sponsor and Initiator must be different employees (they cannot be the same person), in the same line of business, and within the business group sponsoring the initiative.
- The Sponsor is accountable for committing BC Hydro to the Initiative and evaluating and realizing the initiative's benefits. Therefore it is expected that the Sponsor has sufficient knowledge of the business to understand the initiative and its benefits.
- Where a Sponsor has insufficient FAAP approval, then the Sponsor's manager, who has necessary FAAP Planning authority to equal to or greater than the total estimated cost of the initiative, must countersign the Business Case. **Note, that there is a difference between FAAP Commitment vs. FAAP Planning authority.** A "Sponsor's Manager" is required to:
  - Be accountable for proposals made by their Delegate.
  - Validate and approve the assessment of the initiatives benefits.
  - Approve the proposal to commit BC Hydro to the investment.
- The Initiator must have authority and responsibility to initiate work.
- The Initiator is Responsible for the completion (authorship) of the Business Case although they may delegate the writing of the document. Should this occur, the initiator is still responsible for the business case's completion, content and quality as well as submission for business case approval. The Sponsor may also submit the documentation should the Initiator be unavailable.
- The Sponsor, the Sponsor's Manager, or the Initiator may change during the Initiative so long as an equivalent replacement is chosen and agreed to by the Project steering Committee or equivalent stakeholder group
- Only in Technology, the Sponsor and the Tech Owner can be the same person if the Initiative originates exclusively within Technology.
- Technology always signs as the Technology FAAP Approver.
- Although specific Accountabilities and Responsibilities have been assigned in the RACI, it is important to note that business case development is a collaborative process. The objective of the RACI is to identify various roles, clarify contributor content and actions, needed for the successful completion and approval of a business case.
- All business cases submitted for approvals must be accompanied by:
  - A completed Contributors' Checklist (See below)
  - Corresponding EAR
- The Standard and Comprehensive Business Case templates have the same approving signatories:



Approvals		
Prepared by the Initiator	Name: Notes (if Required):	Date (YYYY/MM/DD):
Sponsor	Name: Signature:	Date (YYYY/MM/DD):
Sponsor's manager	Name: Signature:	Date (YYYY/MM/DD):
Technology Owner	Name: Signature:	Date (YYYY/MM/DD):
Project Delivery	Name: Signature:	Date (YYYY/MM/DD):
Technology FAAP Approver	Name: Signature:	Date (YYYY/MM/DD):

- At the end of all Business Cases, included in the business case approvals section, is a Reviewers' section. Once a document is deemed ready for revisions and approvals, the business case is sent to the reviewers to indicate review completion and acceptance (you can include name and review date electronically in the document). Once reviews are complete, then the Business Case will follow the Approvals process.

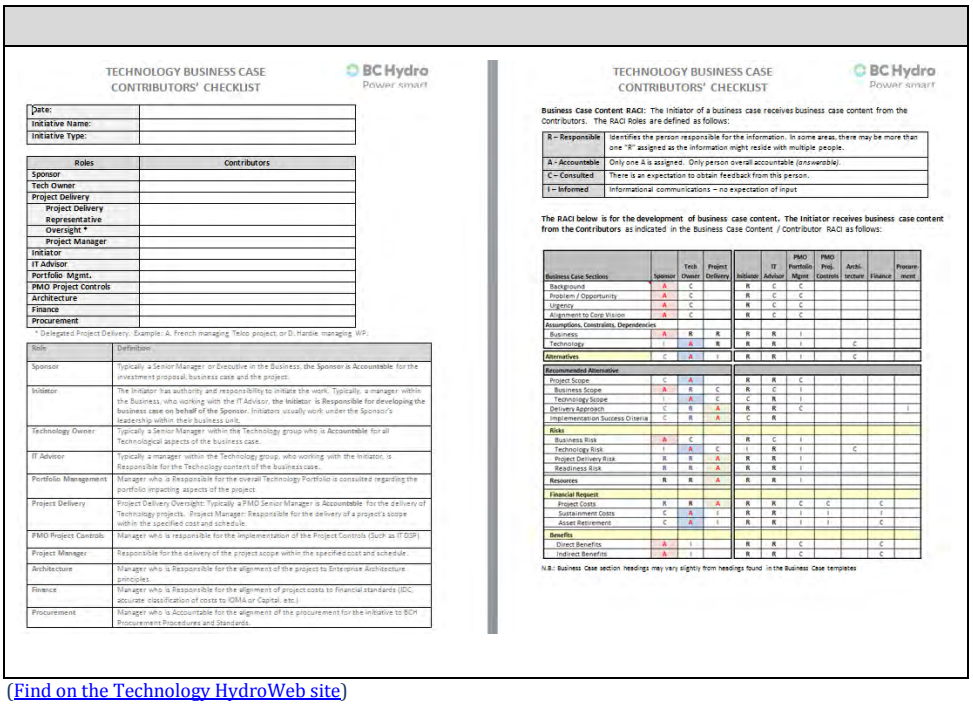
  Note: For Capital Purchase business cases, there is a slight variation for Reviewers. Contract Management is included for licensing reviews.

Role	Reviewer Name	Date Review YYYY/MM/DD	Initial for Completion of Review
Project Manager			
PMO Controls			
Portfolio Mgmt.			
IT Advisor			

Roles

Notes about Roles and Contributors' Checklist

- <<NEW starting 2016/01>>: Finance's Expenditure Authorization Request (EAR) document, is now completed exclusively by Finance with costs provided by the Technology initiative.
- <<NEW starting 2016/01>>: The business case, Contributors' Checklist and EAR will be presented together for approvals. Sample view of the Contributors' Checklist, which includes a description of the roles and a RACI of the different sections of the Business Case:



TECHNOLOGY BUSINESS CASE
CONTRIBUTORS' CHECKLIST

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Date:	
Initiative Name:	
Initiative Type:	

Roles	Contributors
Sponsor	
Tech Owner	
Project Delivery	
Project Delivery Representative	
Oversight *	
Project Manager	
Initiator	
IT Advisor	
Portfolio Mgmt.	
PMO Project Controls	
Architecture	
Finance	
Procurement	

* Delegated Project Delivery. Example: A. French managing Telco project, or D. Hardie managing WP.

Role	Definition
Sponsor	Typically a Senior Manager or Executive in the Business, the Sponsor is Accountable for the investment proposal, business case and the project.
Initiator	The Initiator has authority and responsibility to initiate the work. Typically, a manager within the Business, who working with the IT Advisor, the Initiator is Responsible for developing the business case on behalf of the Sponsor. Initiators usually work under the Sponsor's leadership within their business unit.
Technology Owner	Typically a Senior Manager within the Technology group who is Accountable for all Technological aspects of the business case.
IT Advisor	Typically a manager within the Technology group, who working with the Initiator, is Responsible for the Technology content of the business case.
Portfolio Management	Manager who is Responsible for the overall Technology Portfolio is consulted regarding the portfolio impacting aspects of the project
Project Delivery	Project Delivery Oversight: Typically a PMO Senior Manager is Accountable for the delivery of Technology projects. Project Manager: Responsible for the delivery of a project's scope within the specified cost and schedule.
PMO Project Controls	Manager who is responsible for the implementation of the Project Controls (Such as IT DSP)
Project Manager	Responsible for the delivery of the project scope within the specified cost and schedule.
Architecture	Manager who is Responsible for the alignment of the project to Enterprise Architecture principles.
Finance	Manager who is Responsible for the alignment of project costs to financial standards (IDC, accurate classification of costs to IOMA or Capital, etc.)
Procurement	Manager who is Accountable for the alignment of the procurement for the initiative to BCH Procurement Procedures and Standards.

TECHNOLOGY BUSINESS CASE
CONTRIBUTORS' CHECKLIST

BC Hydro Power smart

Business Case Content RACI: The Initiator of a business case receives business case content from the Contributors. The RACI Roles are defined as follows:

R – Responsible	Identifies the person responsible for the information. In some areas, there may be more than one "R" assigned as the information might reside with multiple people.
A - Accountable	Only one A is assigned. Only person overall accountable (answerable).
C – Consulted	There is an expectation to obtain feedback from this person.
I – Informed	Informational communications – no expectation of input

The RACI below is for the development of business case content. The Initiator receives business case content from the Contributors as indicated in the Business Case Content / Contributor RACI as follows:

Business Case Sections	Sponsor	Tech Owner	Project Delivery	Initiator	IT Advisor	PMO Portfolio Mgmt	PMO Proj. Controls	Archi-tecture	Finance	Procure-ment
Background	A	C		R	C	C				
Problem / Opportunity	A	C		R	C	C				
Urgency	A	C		R	C	C				
Alignment to Corp Vision	A	C		R	C	C				
Assumptions, Constraints, Dependencies										
Business	I	A	R	R	R	I				
Technology	I	A	R	R	R	I		C		
Alternatives	C	A	I	R	R	I		C		
Recommended Alternative										
Project Scope	C	A		R	R	C				
Business Scope	A	R	C	R	C	I				
Technology Scope	I	A	C	C	R	I				
Delivery Approach	C	R	A	R	R	C				I
Implementation Success Criteria	C	R	A	C	R					
Risks										
Business Risk	A	C		R	C	I				
Technology Risk	I	A	C	I	R	I		C		
Project Delivery Risk	R	R	A	R	R	I				
Readiness Risk	R	R	A	R	R	I				
Resources	R	R	A	R	R	I				
Financial Request										
Project Costs	R	R	A	R	R	C	C		C	
Sustainment Costs	C	A	I	R	R	I	I		I	
Asset Retirement	C	A	I	R	R	I	I		C	
Benefits										
Direct Benefits	A	I		R	R	C			C	
Indirect Benefits	A	I		R	R	C			C	

N.B.: Business Case section headings may vary slightly from headings found in the Business Case templates

([Find on the Technology HydroWeb site])

Roles

Contributors' Checklist Examples

Below are three examples of a completed contributor's checklist.

- Project

Date:	2016 January 15
Initiative Name:	Telecomm Project - Initiative Name
Initiative Type:	Project

Roles	Contributors
Sponsor	Adam French
Tech Owner	Adam French
Project Delivery	Davor Razlog
Project Delivery Representative	Laura Stoicescu
Oversight *	Adam French
Project Manager	Keith Fleming
Initiator	Kyle Luciak
IT Advisor	
Portfolio Mgmt.	David McDonald
PMO Project Controls	Laura Stoicescu
Architecture	Salman Shahid
Finance	Claudia Moniz de Sa
Procurement	

- Project – Oversight Delegated

Date:	2016 January 15
Initiative Name:	Project - Initiative Name
Initiative Type:	Project

Roles	Contributors
Sponsor	Rick Malone
Tech Owner	Stephanie Lee
Project Delivery	Davor Razlog
Project Delivery Representative	Thalia MacIsaac
Oversight *	Nada Kovacevic
Project Manager	Laurie Sheehan
Initiator	Lynne Foster
IT Advisor	Shui Szeto
Portfolio Mgmt.	David McDonald
PMO Project Controls	Thalia MacIsaac
Architecture	Lucas Malesku
Finance	Claudia Moniz de Sa
Procurement	

Roles

Contributors' Checklist Examples

- Work Program – Delegated Oversight

Date:	2016 January 15
Initiative Name:	Work Program Name
Initiative Type:	Work Program

Roles	Contributors
Sponsor	Donnie Hardie
Tech Owner	Adam French
Delivery	Davor Razlog
Delivery Representative	Laura Stoicescu
Oversight *	Donna Hardie
Work Program Manager	Grace Feng
Initiator	Craig Montgomery
IT Advisor	
Portfolio Mgmt.	David McDonald
PMO Project Controls	Laura Stoicescu
Architecture	
Finance	Claudia Moniz de Sa
Procurement	

- Capital Purchase – with a capital purchase there is no project or work program delivery. Rather, there is a licensing component and requires a review by Contract Management. Capital purchase also has no labour associated with it.

Date:	2016 January 15
Initiative Name:	Capital Purchase Name
Initiative Type:	Capital Purchase

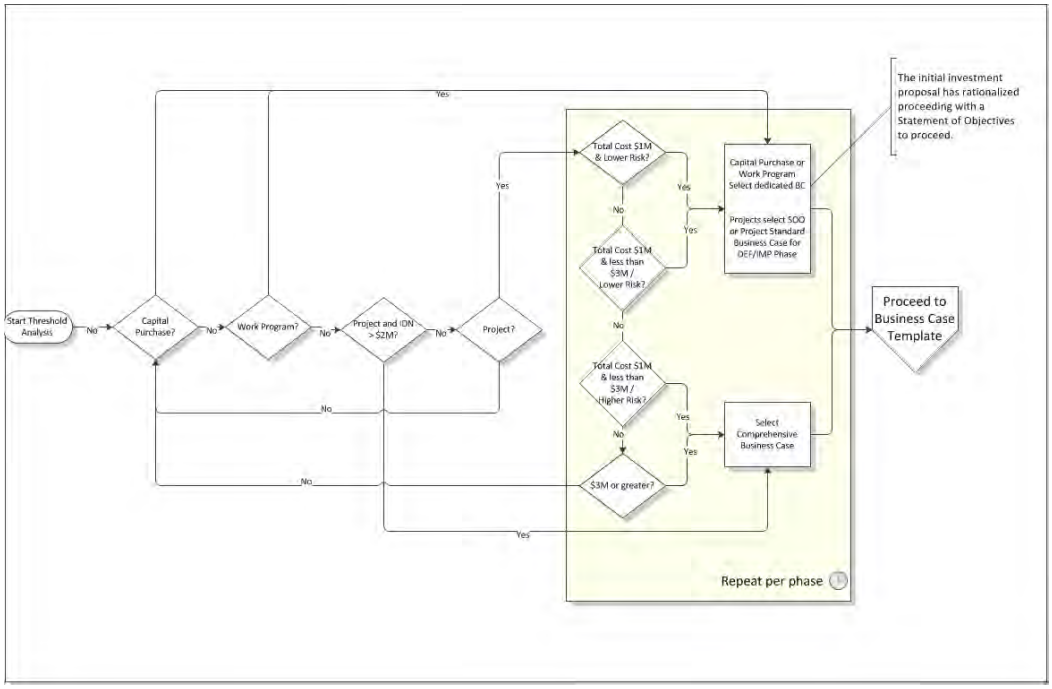
Roles	Contributors
Sponsor	Helen Whittaker
Tech Owner	Adam French
Delivery	N/A
Delivery Representative	N/A
Oversight *	N/A
Manager	N/A
Initiator	Kyle Luciak
IT Advisor	
Portfolio Mgmt.	David McDonald
PMO Project Controls	N/A
Architecture	
Finance	Claudia Moniz de Sa
Contract Management (for software purchases)	Jon Evans

On the technology HydroWeb the Contributors' checklist is available.

Using the Appropriate Template

The Threshold Analysis

The Threshold Analysis is designed to help the user determine which business case template is needed. In consultation with Project Delivery, agreement is reached on classification - Work Program, Project or Capital Purchase. In consultation with the Technology Owner, use the Threshold Analysis Flowchart below to decide on the appropriate Template:



The above Flowchart incorporates the following Threshold Analysis related aspects:

- **Delivery Approach:**
  Initiative Initiators will need to discuss the Delivery Approach of their initiative with the IT PMO in order to determine the appropriate path:

Initiative Complexity	Guidance
Lower complexity	Lower complexity initiatives that do not require Identification or Definition and can be classified as Work Programs or Capital Purchases.
Medium complexity	Medium complexity initiatives that are classified as Projects may use the Standard Business Case template so long as they are not considered to maintain significant risks
Higher complexity	Higher complexity initiatives (Usually classified as Projects) may merit the use of the Comprehensive Business Case Template due to higher risk.

Threshold Analysis

- **Financial Aspect:**
  Initiative Initiators will need to discuss the Financial Aspect associated with their Initiative with the Technology Owner in order to determine the appropriate Project related Business Case:

Overall Initiative Value	Guidance
< $1M	These initiatives suggest a likelihood of having lower risk thus the standard business case is appropriate. Work programs and acquisitions would also typically fall within this financial/risk bracket as well as associated risk level.
>$1M and <$3M	Initiatives greater than $1M yet less than $3M, judgment and discussion is required to identify the required business case - if a Standard or the Comprehensive. If, the investment tends to indicate potentially, more complexity and risk, for example, a $1.2M initiative might be predominantly infrastructure thus the Comprehensive Business case might not be warranted. In another scenario, $1.2M could potentially be introducing new technology to the business and business readiness is low, thus higher overall risk and requires extra diligence thus requires the comprehensive template. When determining which business case to use, this requires discussion and the Technology Owner is accountable for the decision.
>$3M	By virtue of the investment, automatically the comprehensive business case is required. Exceptions are possible in consultation with Technology VP and Technology Owner. Capital Purchases and Work Programs of a value greater than $3M can be written on their dedicated business case template.

N.B.: Each time a Project enters a new phase it must re-assess its BC template. If Financial or Delivery aspects of the project have changed materially a different template may be required.

Risk

Introduction to Risk

At the inception of a Technology initiative, as per BCH enterprise practice, the Initiator works with the Tech Owner or the IT Advisor to characterize the potential benefits of an initiative using the Corporate Risk Matrix (Find it here[1]) and using Structured Decision Making (Find it here[2]) process.

Once a business case is developed in Technology, the Initiator uses the Technology Risk Assessment Guide. The Risk Assessment Guide addresses four categories of risk that fall within the scope of a Technology delivery project.

- Business risk: those risks that impact the realization of benefits;
- Technology risk: those risks related to the maturity of the technology;
- Delivery risk: those risks related to the delivery of the project; and
- Readiness risk: those risks related to the ability of the organization to execute the project.

In the Identification, Definition, and Implementation Phases, the concept of risk, assessment and mitigation are critical to the successful completion of a business case. To characterize risk within the business cases (IDN through IMP) use the Risk Assessment Guide found in the Technology page of HydroWeb in the Technology Business Cases section here:

http://hw/our_bus/gen/tech/it_business_services/tech_bus_cases/Pages/default.aspx

There is no need to copy the Risk Tools into your business case, rather use the ratings and language that suits your situation within the Business Cases to ensure the risks associated with your initiative are as accurately portrayed as possible. This will help Technology avoid entering recklessly into projects that are risk laden and likely to yield compromised results.

[1] http://hw/our_bus/fin_corp/erm_framework/Pages/default.aspx
[2] http://hw/our_bus/fin_corp/sdm/pages/default.aspx

Tips for Writing a Good Business Case

Logic Flow

Below find a sample of a logic template that is to be used **BEFORE starting writing a Comprehensive Project Business Case** (IDN, DEF or IMP).

This tool would also work for a Standard Project Business Case, but as the Standard variety are less complex, following the logic through the case makes it more manageable. Improved results will be achieved if this template is employed, and socialized with the Sponsor and Initiator (Sponsor agreement is optional, but probably preferable). Add Risks (Readiness, Business, Technology, and Delivery) at the bottom if helpful.

Business Need	Intended Outcome	Benefits	Measurement	Alternative 1	Alternative2	Alternative 3
Reduce Costs (Transaction Fees)	- Reduce transaction Costs supported by BC Hydro for customer migrating from Cheque, online banking and ePost	Reduced transaction costs supported by BC Hydro for people migrating from cheque, online banking or ePost payments	$ / transaction	Hi	Hi	Low
Reduce Costs	- Reduce accounts using paper bills	Reduced usage of paper bill through migration to digital billing	Reduction of accounts relying on paper billing Reduction of postage fees Reduction of materials used for paper billing	Hi	Med	Low
Increase CSAT	- Make the bill payment experience easier, more intuitive and usable for our customers - Prevent payment errors, which could occur when customers manually enter account number or bill amount information - Prevent automatic disconnection if the customer pays his/her amount due	Increased CSAT due to reduced time and effort to pay	CSAT result	Med	Low	Low
Increase CSAT	- Provide online payment option aligned to modern customer expectations	Increased CSAT due to BC Hydro providing payment option aligned to modern customer expectations	CSAT result	Hi	Med	Med
Increase alignment with Corporate Vision	- Make it easier for customers to do business with BC Hydro	Reduced reputational risk through improved alignment to Corporate Vision	Measured by completion of project	Hi	Low	Med

Business Case Writing Tips:

Principles

Do not underestimate the challenge of writing a business case well. In general, follow these principles:

- Use the appropriate template
- Be truthful
- Be succinct but not simplistic
- Avoid hyperbole
- Use bulleted lists is encouraged
- Verify inputs
- Welcome criticism/suggestions from reviewers

Logic Flow

Business Case logic flow should follow this methodology:

1. A business unit completes a specialized kind of work →
2. The business unit has discovered that they have a new, emergent need(s) →
3. Emergent needs can be addressed through the completion of Objectives →
4. Objectives are matched to a project's Benefits (achieved through the selection of a preferred viable Alternative) →
    a. (Comprehensive Business Case Template) All viable Alternatives are rated against their expected achievement of the Benefits, Risks, and costs.
5. Benefits are achieved through successful completion of the Initiative →
6. Each of the Benefits are associated with a Measurement that can be tracked post-initiative completion →
7. Expected Benefits are stated and ready to be accrued

Frequently Asked Questions

Q. **Further help – who to ask for more information?**

A. Your IT Advisor or Technology Owner. If they can't answer your question, they have someone to ask.

Q. **I have a suggestion for a Business Case Template, who do I tell?**

A. Tell your IT Advisor or Technology Owner. They will know who to contact.

Q. **What is the typical duration of a funding event from starting writing a business case to obtaining funding so that work can begin?**

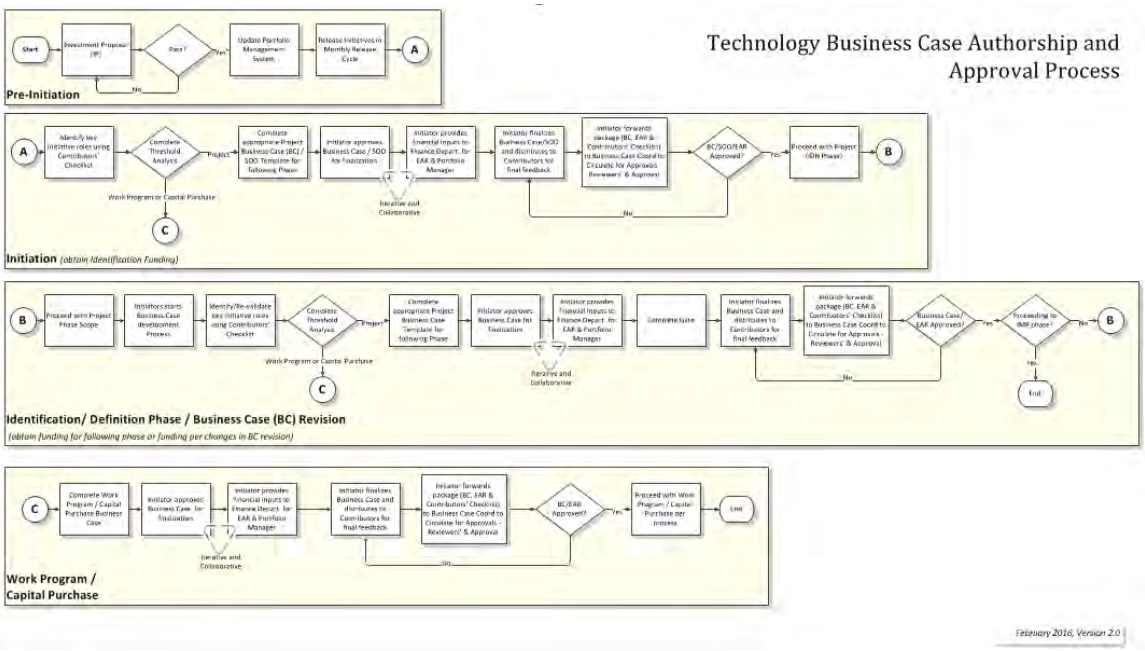
A. The duration of time it takes from business case inception to reception of funding varies from 4 weeks to months. Typical duration is ~6 weeks for a medium complexity and risk project of under $3M. Larger more complex Business Cases (usually using the Comprehensive Project template will take a minimum of a month to draft.

Q. **I need to purchase software / licenses; do I include Project Delivery in the reviews and approvals?**

A. For software / license purchases, include Contract Management for the review. Update your Contributors' Checklist accordingly.

Technology Business Case Authorship Process

The diagram is to provide a representation overall process. Refer to the Technology HydroWeb for the actual process document in a larger more legible 11x17 format.



13.0 C. BC HYDRO APPROVAL AND OVERSIGHT CONTROLS AND PROCESSES

Reference: SAP-RELATED EXPENDITURES
Exhibit A2-2, Tab Z, pp. 12-13
Financial systems replacement project business case – June 2009

BC Hydro states the following on page 9 of the Financial Systems Replacement Project Business Case dated June 2009 which was filed as Tab Z in Exhibit A2-2:

IT Savings / Efficiencies: Although the initial project investment is larger than that what was originally estimated for a PeopleSoft re-implementation, once fully implemented the SAP ERP will result in a simplified IT landscape that will enable a reduction in total IT spending that would not otherwise be achievable in a complex multi-ERP environment…

… The anticipated reduction in future IT spending associated with a single vendor IT environment (the SAP solution) relates to lower future costs for development, sustainment, and maintenance of BC Hydro's enterprise applications. It is also expected that the new SAP systems will have minimal customization which will in-turn lower the ongoing development and sustainment costs. The potential savings will increase as BC Hydro commits to invest in future phases of the SAP program as these future phases will ultimately combine with this Project to create a fully integrated IT environment.

1.13.5 Please compare and contrast the estimating and scheduling process in place during F2009-F2010, F2011-F2013, and F2013-current which was used to ensure that project planning assumptions, budget and resources are/were adequate.

RESPONSE:

The F2009-F2013 period used the same estimating and scheduling processes for IT projects. During these fiscal years IT project management guidelines specified the general requirement for project planning, scheduling, and estimating. Project Managers also used their past expertise for planning, scheduling and estimating.

The IT project management guidelines were updated effective F2013 and during the F2013 to current period Technology PMO resources have been increased. The focus during this period includes:

1. **Progressive improvement of IT project cost estimates, which entails an updated cost estimate at each phase of the project and an increased level of accuracy as the phases advance toward implementation;**

2. **A requirement for project schedules with monthly updates. IT project managers are required to create and maintain a project schedule using a standardized approach and software (Primavera P6), including task dependencies and key milestones;**

3. **Peer reviews of schedules and estimates. Technology PMO advisors can require evidence of peer reviews prior to passing a project through an ITDSP gate. Peer reviews are standard practice based on the size and complexity of IT projects; and**

4. **Implementation of a standard cost estimating tool. All new IT projects are required to use a standard cost estimating spreadsheet, which supports 'bottom up' resource planning and cost estimation.**

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1.13.5 Please compare and contrast the estimating and scheduling process in place during F2009-F2010, F2011-F2013, and F2013-current which was used to ensure that project planning assumptions, budget and resources are/were adequate.

1.13.5.1 Please assess the adequacy of the estimating and scheduling processes for the Enterprise Financials Upgrade project, PPM project, and Plan & Schedule Work project with regards to the adequacy of planning assumptions, budgets and resource availability.

RESPONSE:

The Enterprise Financials Upgrade project was replaced by the Financial System Replacement project in August 2008.

The estimating and scheduling processes for the Financial System Replacement and PPM projects are considered adequate because original estimates for scope and schedule were sufficiently accurate relative to actual costs and schedule for the same scope. Scope changes were introduced in both projects and the impact of these was also estimated with sufficient accuracy. This is explained further in the narrative below.

The estimating and scheduling processes for the PSW project, for the phases completed, are not considered adequate because actual cost and schedule for the early project phases considerably exceeded the original estimates.

Financial System Replacement (FSR) – This project was estimated in its first full funding request to cost $18.7 million. It was delivered at an actual cost of $18.9 million. Contingency included in the $18.7 million was used to accommodate scope change requests and some unexpected higher costs from sub-contracted firms. Additional funding was approved to cover the unexpected costs that could not be accommodated through contingency. One initial planning assumption that proved to be incorrect was that legacy system integration could be achieved with minimal modifications to the legacy system. As a result, more cost was incurred integrating with Passport and other legacy systems than originally planned. With regard to the project schedule the FSR project go-live was achieved on time for the start of the F2011 fiscal year, as planned.

Project and Portfolio Management (PPM) – The PPM project was estimated in its first full funding request (EAR Revision 3) to cost $18.8 million. This estimate assumed two waves of implementation – wave 1 to coincide with the FSR project go-live of April 2010, and wave 2 to deliver additional tools, new processes and practices in March 2011. Wave 1 was delivered as planned in April 2010. Wave 2 was on track to be delivered as planned, based on assumptions from December 2009. However, several key factors challenged the original planning assumptions for wave 2 as follows:

1. **BC Transmission Corporation was re-integrated into BC Hydro (announced in spring 2010) creating new requirements for managing projects that were to be incorporated into the PPM project. The BCTC work also impacted availability of PPM project resources and caused the project timeline to need to be extended.**

2. **Out-of-the-box functionality of some solution components, which had been initially assumed to be sufficient to meet business requirements, was decided to be enhanced to meet more detailed business requirements. These more detailed business requirements had not been developed by December 2009 when the first full funding request was approved.**

3. **Stabilization of the solution was decided to be extended to seven months beyond the wave 2 go-live. This decision was based on experience of the wave 1 go-live.**

These factors, and others detailed in the PPM project EAR Revision 4, accounted for the increase in project costs to $26.0 million.

<u>Plan & Schedule Work (PSW)</u> – During its design phase the PSW project estimated a total project cost as high as $40.7 million. As the project did not proceed to implement all planned scope it is not possible to determine the accuracy of these initial estimates, nor the accuracy of the related schedule.

The PSW project's initial estimate for its design phase was $4.5 million. At project end, November 2012, the project had spent $10.5 million. Project records suggest that the project was working on both design and Implementation phase tasks at times during the period between project inception and November 2012. With minimal implementation phase scope delivered, it is clear that the initial cost estimate for design phase was too low.

13.0 C. BC HYDRO APPROVAL AND OVERSIGHT CONTROLS AND PROCESSES

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1.13.6 With regards to the cost estimates provided in Businesses Cases and EARs, please explain the mechanisms in place to measure the accuracy of cost estimates. If the mechanisms in place are different depending on the phase/stage of a project, please separately identify the mechanisms in place at each phase/stage of a project.

RESPONSE:

While there is not a formal mechanism in place across IT projects to measure cost estimate accuracy, the use of standardized cost estimating spreadsheets and subject matter expert peer reviews help ensure cost estimates are reasonable, all resources are accounted for, the costs correspond to project schedules, and contingency is appropriately considered.

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1.13.7 Is Earned Value Management, Benefits Realization Management, or a similar framework, applied to IT projects at BC Hydro?

RESPONSE:

The following answer also responds to BCUC IRs 1.13.7.1.1 and 1.13.7.2.

No. BC Hydro uses the ITDSP Framework and the Project Management Guidelines for IT Projects as the standard process for IT projects delivery. As part of this framework, a standardized project scheduling tool (Primavera P6) is used for IT projects. This tool allows Project Managers to manually allocate resources where practical, track progress and monitor project performance versus plan. Rules of credit are applied to keep progress measurement objective, based on physical percent complete of each project activity. This allows Project Managers to exercise judgment to reflect the uniqueness of each project when applying the rules of credit, and provide a realistic view of the project performance against defined schedule baselines during delivery. In addition to the standardized scheduling tool, a standardized cost estimating tool further assists Project Managers in tracking progress of scope delivery against time and costs.

BC Hydro's IT Delivery Standard Practices (ITDSP) was originally developed in alignment with and modeled after Software Engineering Institute Capability Maturity Model (SEI SW CMM) Level 3 Organizational Process Definition (OPD) process area. BC Hydro did not engage an industry recognized certified and independent body to specifically validate the implementation of the framework. In Fiscal Year 2016, BC Hydro used its Audit Services group (accountable directly to the Board), complemented with a senior external subject matter expert from PricewaterhouseCoopers, for auditing the IT Capital Planning and Project Delivery Functions. The overall conclusion on Project Management and Delivery was that a robust and well-managed project delivery process is in place which includes an established framework, monitoring mechanisms and a compliance function.

Benefits Realization Management is not currently applied to IT projects at BC Hydro. Audit Services recommended in F2016 that a benefit realization process be developed. BC Hydro intends to develop a plan by March 31, 2017 and implement a benefit realization process by March 31, 2018. Please refer to Attachments 23 and 24 of the Consolidated Information Filing for the related audit reports, including management response.

Earned Value Management is not applied to IT projects at BC Hydro, but this may be considered as an area for future improvement.

13.0 C. BC HYDRO APPROVAL AND OVERSIGHT CONTROLS AND PROCESSES

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1.13.7 Is Earned Value Management, Benefits Realization Management, or a similar framework, applied to IT projects at BC Hydro?

1.13.7.1 If yes, please identify the framework(s) in place.

RESPONSE:

Given BC Hydro's response to BCUC IR 1.13.7, this question is not applicable.

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1.13.7 Is Earned Value Management, Benefits Realization Management, or a similar framework, applied to IT projects at BC Hydro?

1.13.7.1 If yes, please identify the framework(s) in place.

1.13.7.1.1 Did BC Hydro use an industry-recognized certified and independent body to validate the implementation of the framework? If so, what were the results? If not, why not?

RESPONSE:

Please refer to BC Hydro's response to BCUC IR 1.13.7.

13.0 C. BC HYDRO APPROVAL AND OVERSIGHT CONTROLS AND PROCESSES

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1.13.7 Is Earned Value Management, Benefits Realization Management, or a similar framework, applied to IT projects at BC Hydro?

1.13.7.2 If no, please explain why not.

RESPONSE:

Please refer to BC Hydro's response to BCUC IR 1.13.7.

14.0 C. BC HYDRO APPROVAL AND OVERSIGHT CONTROLS AND PROCESSES

Reference: ORGANIZATIONAL STRUCTURE
Exhibit B-3, Section 2.1, pp. 3-5
Context for BC Hydro's SAP strategy development

BC Hydro states on page 3 of its Consolidated Information Filing:

During 2007 and 2008, BC Hydro began to focus on its IT&T [Information Technology & Telecommunications] strategy in anticipation of changing business needs at BC Hydro and in particular, an increasing portfolio of capital projects and maintenance work programs. BC Hydro had a decentralized IT&T management structure at that time.

1.14.1 Is the IT&T management structure at BC Hydro still decentralized? Please explain.

RESPONSE:

No. BC Hydro began to consolidate all IT and technology functions in 2009 and 2010. This resulted in operating costs from IT being removed from different areas of the business to one centralized IT group for management and oversight. Since that time, IT&T has been centralized in BC Hydro with a single group ("Technology") having responsibility for planning, delivery, operation, and sustainment of IT systems for the enterprise.

Note that Project Sponsors, Project Initiators, and all other business stakeholders of IT projects remain decentralized in their respective business groups. The centralized Technology organization maintains some teams that are dedicated to serving these respective business groups, and other teams that provide centralized service to BC Hydro.

14.0 C. BC HYDRO APPROVAL AND OVERSIGHT CONTROLS AND PROCESSES

Reference: ORGANIZATIONAL STRUCTURE
Exhibit B-3, Section 2.1, pp. 3-5
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1.14.2 What is the current composition of BC Hydro's IT&T organization? Please provide a current organization chart and responsibility assignment matrix (also known as a RACI Chart). Also, please indicate in the organization chart and responsibility assignment matrix the roles held by BC Hydro staff, professional services staff and contracted staff.

RESPONSE:

BC Hydro's IT&T organization is heavily dependent on contracted services and is currently comprised of 162 full time BC Hydro employees and approximately 700 contracted staff. The complement of contractors includes independent contractors, contractors provided by small to medium firms, and those provided through our large service providers. BC Hydro full-time staff are responsible for management oversight of all functions.

BC Hydro provides a confidential Attachment 1 to the Commission that provides a current organization chart that shows full time BC Hydro staff and the number of contractors working in each functional area. Attachment 1 contains information on the relative levels of employees and contractors that is commercially sensitive for negotiations with contractors and the labour union. A public version of the current organization chart is provided in Attachment 9 to BC Hydro's response to BCUC IR 1.15.4.

Attachment 2 provides the management RACI chart for the current organization. It includes only BC Hydro staff as they fill all management roles.

14.0 C. BC HYDRO APPROVAL AND OVERSIGHT CONTROLS AND PROCESSES

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Exhibit B-3, Section 2.1, pp. 3-5
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1.14.2.1 Please differentiate between operational structures as defined by human resources (HR) versus matrix operating structures in the delivery of projects and IT&T capabilities.

RESPONSE:

BC Hydro's current IT organizational structure is designed to align the "operation structures as defined by human resources" with the planning, delivery, and operating structure functions needed for service delivery throughout the lifecycle of a project. This alignment is reflected in the RACI matrix provided in BC Hydro's response to BCUC IR 1.14.2.

CONFIDENTIAL ATTACHMENT

FILED WITH BCUC ONLY

FUNCTION	Chief Information Officer (Kip Morison)	**Business Partner Services** (Jack Siu)						**Operations** (Enn Kiudorf)							**Delivery and Contract** (Davor Razlog)						**Planning and Performance** (Helen Whittaker)						
	Chief Information Officer (Kip Morison)	**Business Partner Services** (Jack Siu)	**Corporate** (Tim Kikkert)	**Customer** (Craig Montgomery)	**T&D, Aboriginal Relations** (Dan Boucher)	**CIPD, Generation, Energy Planning, Business and Economic Development** (Gerard Kho)	**Records and Information management Service** (Rosa Munzer)	**Operations** (Enn Kiudorf)	**ERP, SAP, Passport** (Nada Kovacevic)	**Integration & Info Mgmt.** (Ryan Planinshek)	**IT Service Mgmt., Bus Appls Support** (Lisa Williams)	**Network, Infrastructure & Cyber Security Operations** (Gurmeet Singh)	**AMI Core Applications** (Barry Wong)	**Enterprise Content & App Management** (Scott Williamson)	**Delivery and Contract** (Davor Razlog)	**Program Manager** (Bryan Baker)	**Project Controls, QA and Support** (Laura Stoicescu)	**Contract Management** (Jon Evans)	**Program Manager** (Mark Christianson)	**Customer Billing** PM (Vacant)	**Planning and Performance** (Helen Whittaker)	**Mgr, Risk and Reporting** (Shaheen Rehmat)	**Portfolio Management** (David McDonald)	**Enterprise Architecture** (Salman Shahid)	**Cyber Security Planning & NERCIP Compliance** (Jim Attridge)	**Network Infrastructure Planning** (Adam French)	**Program Manager** (Donna Hardie)
BUSINESS RELATIONSHIP MANAGEMENT	A	R																									
Manage relationships with the Business		A	R	R	R	R																					
Articulate business needs as requests for investments		A	R	R	R	R	C	C	C	C	C	C	C	C	C	C	I	I	C	C	C		Cl	C	C	C	
Ensure business requirements are delivered - **TBD**																											
TECHNOLOGY PLANNING	A																				R						
ENTERPRISE ARCHITECTURE																					A			R			
Architecture standards and governance																					A			R			
Provide direction on future technologies									C	C		C	C								A			R	C	C	
TECHNOLOGY ASSET INVESTMENT PLANNING																					A						
Plan integrated/overall Capital and OMA Investment		C						C							C						A		C		C	C	
INTEGRATED PORTFOLIO PLANNING																					A						
Develop capital budgets (incl IOMA)		C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	I	I	C	C	A	I	R	I	C	C	I
Develop operating budgets (incl SOMA)		C	C	C	C	C	C	C	C	C	C	C	C	C	C	I	C	C	I	I	A	C	R	C	C	C	C
Benefits traking an realization **TBD**																											
Manage capital and operating budgets	A	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
Determine Technology resource strategy and mgmt plan																					R						
TECHNOLOGY DELIVERY	A														R												
PORTFOLIO MANAGEMENT															A												
Ensure business objectives are delivered															A		R										
Provide reporting and oversight															A		R						C				
PROJECT and PROGRAM DELIVERY															A												
Deliver strategic and complex project outcomes		I	C	C	C	C		I	C	C	C	C	C	C	A	R	C	I	R	R	I	I	C	C	C	R	
Deliver delegated projects and work program outcomes		I	R	R	R	R		I	R	R	C	C	R	R	A		C	I			I	I	C	C	C	R	
TECHNOLOGY DELIVERY OVERSIGHT															A												
Manage project management standards, controls, testing, QA, QC															A		R							C			
TECHNOLOGY OPERATIONS	A							R																			
BUSINESS SUPPORT AND SERVICE MANAGEMENT								A			R																
Service management					R			A			R																
Provide help desk and application support (Tier 1 & 2)								A			R															R	
TECHNOLOGY OPERATIONS								A																			
Asset ownership enterprise technologies								A	R	R		R	R	R											C	C	
Asset ownership business group technologies		A	R	R	R	R																					
Operate and maintain enterprise technologies			R	R				A	R	R		R	R	R												R	
Operate and maintain business group technologies (GRM, GENIE, etc.)		A	R	R	R	R																					
CONTRACT MANAGEMENT SERVICES															A												
Provide financial, outsourcing, and contract management															A			R									
Manage relationships with service providers - **TBD**																											
RECORDS & INFORMATION MANAGEMENT		A																									
ENTERPRISE RECORDS MANAGEMENT		A					R																				
CORPORATE LIBRARY SERVICES		A					R																				
DRAWING MANAGEMENT SERVICE		A					R																				
ASSET & ENGINEERING RECORDS SERVICE		A					R																				
MANAGE GOVERNANCE & BUSINESS MANAGEMENT																					A						
POLICIES AND STANDARDS		C					C	C			C				C		C	C			A	R	C	C	C	C	
COMPLIANCE MANAGEMENT		C						C							C			C			A	R	C		C		
GOVERNANCE PROCESSES		C						C							C		C				A	R	C				
TECHNOLOGY BUSINESS PLANNING & RISK MANAGEMENT																					A						
PERFORMANCE REPORTING		C						C			C				C						A	R	C				
RISK MANAGEMENT		C	C	C	C	C		C	C	C	C	C	C	C	C		C	C			A	R	C		C	C	
BUSINESS CONTINUITY PLANNING																					A	R					
BUSINESS PROCESS IMPROVEMENTS																					A	R					
RESOURCE MANAGEMENT																					A	R					

14.0 C. BC HYDRO APPROVAL AND OVERSIGHT CONTROLS AND PROCESSES

Reference: ORGANIZATIONAL STRUCTURE
Exhibit B-3, Section 2.1, pp. 3-5
Context for BC Hydro's SAP strategy development

BC Hydro states on page 3 of its Consolidated Information Filing:

During 2007 and 2008, BC Hydro began to focus on its IT&T [Information Technology & Telecommunications] strategy in anticipation of changing business needs at BC Hydro and in particular, an increasing portfolio of capital projects and maintenance work programs. BC Hydro had a decentralized IT&T management structure at that time.

1.14.3 Are professional services or contracted staff engaged in the management of BC Hydro's IT&T?

RESPONSE:

BC Hydro uses contracted staff to augment internal IT staff in roles requiring specialist technical knowledge or to provide additional service delivery capacity, including project management. However, professional services are engaged in an advisory, not management, capacity for initiatives requiring broad industry and/or strategic knowledge.

BC Hydro currently employs 162 full time IT staff, primarily in management, business advisory or technology leadership positions. Approximately 80 per cent of all IT services at BC Hydro are provided by contracted services.

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1.14.3 Are professional services or contracted staff engaged in the management of BC Hydro's IT&T?

1.14.3.1 What role(s) and function(s) do professional services, contract services and/or contract staff perform?

RESPONSE:

Contract services can be in the form of Managed Service Provision or Time & Materials Support Service contracts for the support of various systems and applications provided by the IT&T group for BC Hydro. In this context, contracted services staff perform many functions including infrastructure operations and sustainment, application operations and sustainment, service desk and end user device provisioning and support.

Contract staff are also used to augment internal staff in delivery of capital projects and work programs. In this context, contract staff perform many functions including project management, business analysis, change management, architecture solutions, process definition, application development, and stabilisation support services.

Professional services are engaged on a temporary basis to assist in initiatives requiring specialist knowledge not available internally to BC Hydro.

14.0 C. BC HYDRO APPROVAL AND OVERSIGHT CONTROLS AND PROCESSES

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1.14.3 Are professional services or contracted staff engaged in the management of BC Hydro's IT&T?

1.14.3.2 What form of responsibility and/or accountability has been delegated to professional services and/or contracted staff?

RESPONSE:

Contracted staff under "Managed Service Provision" or "Time & Materials Support Service" contracts for operations and sustainment have responsibility for performance service levels associated with specific systems or applications. Accountability remains with the appropriate BC Hydro manager or lead. There is no delegation of financial approval authority.

Contract staff performing project management services have responsibility for overall project or work program delivery and as such will have oversight over other contracted staff within the project. Accountability for project or work program delivery remains with the appropriate BC Hydro manager or lead. There is no delegation of financial approval authority. Professional services staff have responsibility for deliverables associated with specific initiatives. Accountability remains with the appropriate BC Hydro manager or lead. There is no delegation of financial approval authority.

14.0 C. BC HYDRO APPROVAL AND OVERSIGHT CONTROLS AND PROCESSES

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1.14.3 Are professional services or contracted staff engaged in the management of BC Hydro's IT&T?

1.14.3.3 In what capacity are professional services and contracted staff involved in developing strategies and in developing business cases for specific IT projects?

RESPONSE:

BC Hydro will use contracted staff to draft IT business cases where employees do not have the capacity. The BC Hydro Project Initiator retains responsibility for submitting the business case, and the BC Hydro Project Sponsor retains overall accountability.

Professional services are sometimes used to assist in the development of strategies involving IT. In this context they provide industry and strategic insight and advice and have roles including, project management, facilitation, documentation and presentation development. Professional services staff may also be used to draft IT business cases where appropriate. The BC Hydro Project Initiator retains responsibility for submitting the business case and the BC Hydro Project Sponsor retains overall accountability.

14.0 C. BC HYDRO APPROVAL AND OVERSIGHT CONTROLS AND PROCESSES

Reference: ORGANIZATIONAL STRUCTURE
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1.14.3 Are professional services or contracted staff engaged in the management of BC Hydro's IT&T?

1.14.3.4 What authority is assigned to professional services and contracted staff, if any?

RESPONSE:

Contracted staff may have day-to-day authority over IT operations decisions if this has been delegated to them through a "Managed Service Provision" or "Time and Materials Support Services" contract for infrastructure and applications operations and sustainment.

Contracted staff engaged in project or program management roles have delivery authority over the project teams they are responsible for leading, while BC Hydro maintains overall accountability.

Contracted staff have no financial approval authority.

Professional services staff engaged in strategic or technical advisory services have no authority.

14.0 C. BC HYDRO APPROVAL AND OVERSIGHT CONTROLS AND PROCESSES

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1.14.3 Are professional services or contracted staff engaged in the management of BC Hydro's IT&T?

1.14.3.5 How are recommendations made by professional services and contracted staff vetted and who is involved in the vetting process?

RESPONSE:

Recommendations are reviewed by the immediate BC Hydro manager or lead. In the case of project or work program recommendations, the Project Initiator, Project Sponsor and Project Steering Committee will review recommendations made by contracted staff in project management roles.

In the context of recommendations made by professional services staff, the appropriate BC Hydro manager or sponsor reviews and presents to the steering committee and potentially to the Executive Team, depending on the scale of the initiative.

14.0 C. BC HYDRO APPROVAL AND OVERSIGHT CONTROLS AND PROCESSES

Reference: ORGANIZATIONAL STRUCTURE
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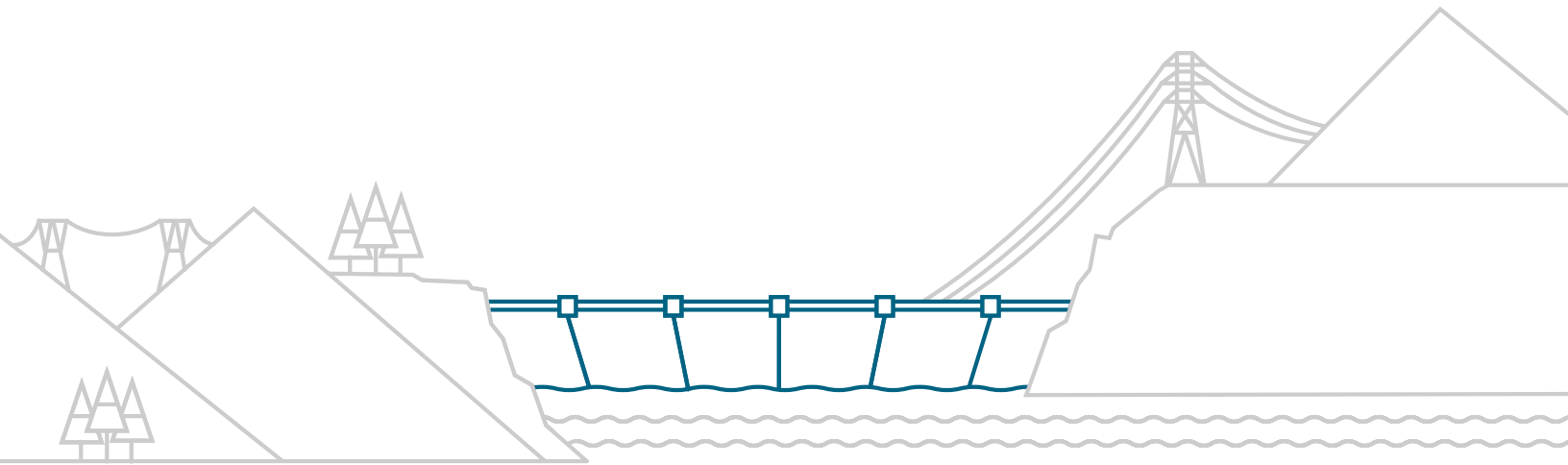
1.14.4 Please explain if BC Hydro has a conflict of interest disclosure policy which it applies to all employees and contract services/staff.

RESPONSE:

BC Hydro's "Code of Conduct" describes the expectations for employees to avoid and disclose actual or apparent conflicts of interest. Each employee is required to read and agree to the terms of the Code after becoming employed with BC Hydro and is required to refresh their knowledge of the Code at least annually through an online quiz. The "Code of Conduct" is Attachment 1 to this response.

BC Hydro's "Contractor Standards for Ethical Conduct" describes the requirements for contractors regarding actual or apparent conflicts of interest. The "Contractor Standards for Ethical Conduct" is provided to each contractor, consultant, supplier, and business associate as part of the BC Hydro procurement process by incorporating it into their contracts directly or by reference when it makes sense to do so. All BC Hydro service contracts reference the standard as a term or condition. The "Contractor Standards for Ethical Conduct" is Attachment 2 to this response.

BC Hydro
Code of Conduct



BC Hydro
Power smart

BC Hydro Code of Conduct

1. VALUES 1

2. HOW TO USE THIS DOCUMENT 2

3. WHO MUST FOLLOW OUR CODE? 2

4. CONFLICTS OF INTEREST 3

- A. Involvement in outside organizations
- B. Trivial financial interests exception
- C. Outside employment
- D. Political participation
- E. Gifts, entertainment and benefits
- F. Business relations with contractors
- G. Personal relationships at work

5. CONDUCT 12

- A. Safety and environment
- B. Compliance with the law
- C. Community
  - (i) Relationships
  - (ii) Respectful workplace
- D. Outside activities and conduct
- E. Alcohol and drugs
- F. Professional qualifications

6. INFORMATION AND PROPERTY 15

- A. Confidential information
  - (i) Protection of non–public information
  - (ii) Protection of personal information
  - (iii) Use of information for investments
- B. BC Hydro property
  - (i) Use of BC Hydro property
  - (ii) Costs and expenses
  - (iii) Computing systems and devices
  - (iv) Physical property
  - (v) Ownership of work product
- C. Post–employment obligations

7. RESPONSIBILITY 19

- A. Seeking advice, making disclosures and reporting concerns
- B. After disclosure
- C. Exemptions
- D. Confidentiality and non–retaliation

1 BC Hydro's values

Mission:

To provide reliable, affordable, clean electricity throughout BC, safely.

Vision:

To be the most trusted, innovative utility company in North America by being smart about power in all we do.

Values:

We are safe.

We are here for our customers.

We are one team.

We act with integrity.

We respect our province.

We are forward thinking.

2 How to use this document

The BC Hydro Code of Conduct, which we call the Code, isn't just a document we glance at and then forget. It outlines, with helpful examples, what's expected of us and why. The Code helps all of us associated with BC Hydro conduct ourselves in a way that reflects BC Hydro's values.

We need to review and agree to the terms of the Code when we first join BC Hydro, and refresh our knowledge of it at least once a year.

3 Who must follow our Code?

The Code applies to BC Hydro and its subsidiaries, including all directors, and full–time, part–time, casual, and executive team employees. The Code may also apply to others if BC Hydro and the other parties specifically agree. When this Code refers to "you", "we", or "us", it means any BC Hydro directors and employees as well as those who have agreed to follow the Code.

Any reference in this Code to BC Hydro includes its subsidiaries, unless the Code specifically indicates otherwise.

We're all accountable for our conduct and compliance with not just the Code, but with BC Hydro's policies, procedures, and standards that complement and support it.

WHAT ABOUT CONTRACTORS AND OTHERS WHO WORK WITH US?

Contractors, consultants, suppliers, and business associates are subject to the *Contractor Standards for Ethical Conduct*, if we incorporate it into their contracts directly or by reference. Any reference in this Code to a contractor includes a contractor, consultant, supplier and business associate.

4 Conflicts of interest

We're responsible for making business decisions fairly, honestly and in the best interests of BC Hydro. Actual or apparent conflicts of interest raise doubts about the integrity of BC Hydro and the impartiality of our decisions and actions. We must all avoid any situation that may give rise to an actual or apparent conflict of interest.

An **actual conflict of interest** arises when our objectivity and ability to act in BC Hydro's best interests are or could be influenced by our personal interests or by our duties and obligations to others, including outside organizations.

An **apparent conflict of interest** occurs when others may reasonably perceive that our objectivity and ability to act in BC Hydro's best interests could be influenced by our personal interests or by our duties and obligations to others, including outside organizations, even when no actual conflict of interest exists.

What are BC Hydro vs. personal interests?

BC Hydro interests include BC Hydro's financial interests, reputation, non–economic interests, operational interests, relationships, values and so on. They can also include public positions that the company strongly and publicly promotes.

Personal interests include our personal financial interests, interests of outside organizations we're involved in, outside employment, interests of our friends and relatives, personal relationships, our political or public interest advocacy activities, our personal reputation, and so on.

Some conflicts are quite clear, but others are less obvious. BC Hydro recognizes that directors and employees have legitimate outside interests. However, there may be situations which could be perceived as a conflict of interest no matter how innocent the intentions of the director or employee.

Ask yourself these questions:

- Could my actions or conduct undermine the public's confidence in my ability to do my work or compromise the trust that the public places in BC Hydro?
- Could someone perceive that I'm using my work relationship with BC Hydro to gain a personal benefit from a third party?
- Do I, or my friends or relatives, stand to gain anything through my relationship with a third party doing business with BC Hydro?
- Could my personal interests affect a decision I might have to make at BC Hydro?
- Do I feel under any obligation to a third party that does business with BC Hydro due to my relationship with that third party?

If the answer to any of the above questions is "yes" or "perhaps" or could be perceived by third parties to be "yes" or "perhaps," you may be in a conflict of interest and should seek advice from your manager, or the Ethics Officer or Code Advisor (as applicable).

WHAT DO WE DO WHEN AN ACTUAL OR APPARENT CONFLICT ARISES?

Disclose the actual or apparent conflict and avoid influencing or participating in any BC Hydro decisions or actions that could be affected by the conflict. You may also need to refrain from participating in decisions or actions outside BC Hydro which could be affected by the conflict.

Full disclosure through proper channels helps us resolve unclear situations and allows us to work to address any conflicting interests.

Involvement in outside organizations

Many of us become involved in outside organizations in our personal time. Our involvement in businesses, charities, foundations, professional associations, non–profit societies, and other organizations can result in an actual or apparent conflict between our duty to act in the best interests of BC Hydro and the interests of the outside organization we're involved in. Usually, this would only happen when the organization has some intersection or relationship with BC Hydro.

Take care to ensure your involvement in outside organizations isn't, and won't result in, an actual or apparent conflict of interest. For example, you shouldn't participate in an outside organization if you have the ability to benefit the outside organization by influencing the decisions or actions of BC Hydro.

Trivial financial interests exception

You may find yourself in an actual or apparent conflict of interest because of a trivial financial interest. Generally, BC Hydro isn't concerned about such interests and would not consider there to be a conflict. A trivial financial interest includes:

- an interest of such minimal value (either in absolute value or in the context of your net worth) that it couldn't reasonably be expected to influence your objectivity or ability to act in BC Hydro's best interests, or
- an interest with a value that can't reasonably be expected to be influenced by your decisions or actions.

Trivial financial interests typically don't require disclosure, but when in doubt, full disclosure of the circumstances is the most effective way to prevent an inadvertent breach of the Code.

Some examples of trivial financial interests

Publicly traded corporation — Ownership of shares in a large publicly traded corporation that's doing business or proposes to do business, directly or through an affiliate, with BC Hydro where:

(a) the director or employee holds, directly or indirectly, an interest of such minimal value that it couldn't reasonably be expected to influence your objectivity or ability to act in BC Hydro's best interests;

(b) the corporation is so large that the value of the corporation's shares are unlikely to be affected by any decisions of BC Hydro, and

(c) no close friend or relative of the director or employee is a director, officer or an employee of the corporation with the ability to influence the corporation's dealings with BC Hydro.

RRSP — Ownership of shares of a corporation by means of a Registered Retirement Savings Plan, Registered Education Savings Plan (or similar financial product) that isn't self–administered.

Mutual funds and similar investments — Ownership of units in a mutual fund (or similar investment) managed by an independent manager and that holds an interest in one or more companies that may have a business relationship with BC Hydro, provided the mutual fund's interest in those companies is less than 5% of the mutual fund's assets.

Blind trust — Ownership of securities in a blind trust or similar arrangement in which the director or employee doesn't make investment decisions, and doesn't know what securities are held, except on an sector or aggregated basis.

Outside employment

Employees can hold outside jobs or engage in modest self–employment activities on their own time and using their own tools and resources. But that outside work can't negatively affect or appear to affect their performance or objectivity for BC Hydro or the reputation of BC Hydro.

However, employees can't work for any entity that's adverse in interest to BC Hydro (e.g. a competitor, or BC Hydro supplier or contractor) where that work could lead to an actual or apparent conflict of interest.

Employees must disclose outside jobs or self–employment activities to their manager or to the Ethics Officer or Code Advisor (if applicable) if there is any chance that work could conflict or interfere with the employee's work for BC Hydro. If you're in doubt about whether you need to disclose the work, err on the side of disclosure and discuss the situation with your manager or the Ethics Officer or Code Advisor (if applicable).

Employees: ask yourself these questions:

- Would other BC Hydro employees or members of the public think that the outside employment could affect how you do your job?
- Could your outside employment interfere with your performance of your duties for BC Hydro?
- Are the duties you perform for BC Hydro the same as or similar to the services you intend to provide in your outside employment?
- Could confidential or proprietary information you obtained from BC Hydro benefit you, your employer or clients in your outside employment?
- In your outside employment will you be working for a third party that:
  - Is doing business with or wishes to do business with BC Hydro?
  - Has taken or may take public positions that are contrary to positions taken by BC Hydro?
  - Has been involved in or may be involved in a business activity that might be a BC Hydro core business or related business activity
  - Would create questions or concerns for anyone who becomes aware of the situation?

If the answer to any of the above questions is “yes” or “perhaps”, the employee may be in a conflict of interest and should seek advice from his or her manager or the Ethics Officer or Code Advisor (if applicable) before engaging in outside employment.

Employees also need to immediately disclose to the Ethics Officer or Code Advisor (if applicable) any negotiations around prospective employment or a contract for services with an employer other than BC Hydro if the negotiations or the prospective employment or contract could place you in an actual or apparent conflict of interest.

You should also be aware that specific conflict of interest disclosure requirements apply to our competitive procurement processes. Bidders must disclose anyone on their bid or project team who currently works for, or has worked for, BC Hydro in the previous two years, as well as other potential conflict relationships. This allows us to identify and take steps to prevent any unfair competitive advantage or actual or apparent conflict of interest.

Political participation

As private citizens, we can participate in the democratic process at any level, including campaigning in elections and running for or holding public office. However, this should be done on our own time, and with care to ensure separation between our personal activities and our association with BC Hydro.

Q&A's: political participation

Q1. Does this mean I can't run for elected office?

A1. No. You can run for public office, as long as you're still able to perform your duties for BC Hydro and the campaign and duties of the public office don't give rise to an actual or apparent conflict of interest.

Q2. What about running for office with my Union?

A2. If an employee wishes to run for elected union office with either the IBEW or MoveUP, they are supported through a variety of leaves that are outlined in our Collective Agreements. For Powertech employees, they may run for elected office with MAPES.

Gifts, entertainment and benefits

You must not, directly or indirectly, receive, solicit, or offer gifts, entertainment or benefits that grant or appear to grant preferential treatment to others in their dealings with BC Hydro. This obligation doesn't change during traditional gift giving seasons. However, this isn't absolute. Some gifts, entertainment or benefits may be acceptable if they are normal and customary in the business circumstances, including:

- Items of nominal value (e.g. a value estimated at $50 or less, unless otherwise approved by your manager) – Promotional items or items to express gratitude with limited value such as inexpensive pens, mugs, calendars, shirts or modest gift baskets on special occasions may be accepted.
- Relationship–building events – Attending an event with a supplier (but not being given event tickets to use independently) is often valuable in building or maintaining a business relationship. Such entertainment is acceptable if it's offered or accepted in the ordinary course of business and it's reasonable in terms of value and frequency.
- Offensive to reject – If the return of a gift or refusal of a gift, entertainment or benefit would be offensive to the donor, then the gift, entertainment or benefit may be accepted. But full details must be immediately disclosed and, if possible, BC Hydro must assume ownership of any gift or benefit received.
- Gifts to BC Hydro—Gifts such as artwork, ceremonial items, or event tickets donated to BC Hydro can be used to support BC Hydro's charitable endeavours, employee engagement or to benefit the organization. Gifts can be accepted if it's in BC Hydro's best interest and the gift doesn't affect or be perceived to affect our objectivity and ability to make decisions in BC Hydro's best interest.

The key is to act with integrity and use good judgement before accepting or offering any gifts, entertainment or benefits given the possible perception that this offer is being made as a bribe. Return inappropriate gifts to the donor with thanks and information about or a copy of this Code. Perishable gifts can be donated to a charity and the donor notified. If you don't know if it's appropriate to accept or offer any gift, entertainment or benefit, ask your manager or the Ethics Officer or Code Advisor (if applicable).

Ask yourself these questions:

Gifts, entertainment or benefits include such things as cash, items, gratuities, entertainment, services, preferred loans or securities.

- Is the value of the item more than nominal, e.g. more than $50?
- Is there no or limited business benefit to BC Hydro?
- Is the donor involved in or likely to be involved in a BC Hydro competitive procurement process?
- Could the gift, entertainment, or benefit compromise or appear to compromise your objectivity and ability to make a decision in BC Hydro's best interest?
- Would you be embarrassed discussing the gift, entertainment or benefit with your manager, coworkers, family or the public?
- If the gift, entertainment or benefit were subject to public scrutiny, would it reflect unfavourably on BC Hydro?
- Is it unusual or outside of accepted business practice in the industry?
- Would it be difficult to justify on a BC Hydro expense statement if you offer it rather than receive it?

If the answer to any of the above questions is "yes" or "perhaps" then the gift, entertainment or benefit may not be appropriate and it would be helpful to seek advice from your manager, the Ethics Officer, or Code Advisor (if applicable).

Q&A's: acceptance of gifts, entertainment and benefits

Q1 A customer wants to give me a gift certificate to thank me for helping them. Is this okay?

A1 In the same way that it's okay to accept modest items such as pens and mugs, there's nothing wrong with accepting a small expression of gratitude from a customer, such as a card, flowers, golf shirt or other item. If the gift certificate were a $10 coffee shop card, this wouldn't be considered unique or unusual as a thank you. Each case must be considered in light of all of the considerations outlined above.

Q2. I have an invitation to attend a seminar sponsored by a company who may become involved in an RFP process to provide services to BC Hydro. There will be many companies attending. Can I go?

A2. If your attendance at the event could create an actual or apparent conflict of interest or could offer or appear to offer the company an unfair competitive advantage in a BC Hydro procurement process, you may need to refuse the invitation. Please contact—or ask your manager to contact— the Ethics Officer or Code Advisor (if applicable) in the event that you have concerns about a specific situation involving bidders in competitive processes.

Q3. BC Hydro supported my attendance at a conference where everyone who attended was entered in a raffle for a trip to Florida. If I win, can I accept the prize?

A3. Not on your own behalf. BC Hydro technically won the prize, and you should pass the tickets to your manager. BC Hydro will use items such as these to support our charitable endeavours (e.g., as prizes in a United Way silent auction).

Q4. An established supplier offered to take me on a guided fishing trip for a few days. Can I go?

A4. No. While the trip may be valuable for maintaining the business relationship, an overnight fishing trip would be too expensive to be considered entertainment in the ordinary course of business.

Q5. A contractor has offered BC Hydro two Canucks tickets to distribute as it sees fit. Can I accept the tickets on BC Hydro's behalf?

A5. If the gift doesn't offer the contractor an unfair competitive advantage in any procurement process or affect or appear to influence any director or employee's objectivity, then acceptance of the gift is acceptable. But you must not use the gift for your own benefit—you can use the tickets to support BC Hydro's charitable efforts or to reward a deserving employee for exceptional effort or results.

REWARD POINTS

We can collect merchant loyalty reward points or benefits when purchasing business travel or other goods and services on behalf of BC Hydro or while conducting BC Hydro's business, in order to receive cost savings or a business benefit for BC Hydro.

Business relations with contractors

Deal fairly with all BC Hydro contractors.

You can't benefit directly or indirectly from BC Hydro's business relationships with contractors. The exception is when it's clear that the benefit is one BC Hydro is aware of and intends you to enjoy, such as a reduced rate for a service that's offered to all BC Hydro employees.

BC Hydro also expects fair and honest behaviour from its contractors, expectations that are covered in the *Contractor Standards for Ethical Conduct*. The Standards apply to a contractor if BC Hydro and the contractor agree to apply them. The Standards must be included in every tender call, request for proposals and contract with BC Hydro unless it's inappropriate to do so. A contractor's failure to comply with the Standards, if applicable, may be a breach of contract and could result in the termination of the contract.

In some cases, the nature of the contractor's work for BC Hydro could lead to an actual or apparent conflict of interest or give the contractor an unfair advantage in BC Hydro's competitive procurement processes. We should avoid these situations. They can negatively impact BC Hydro's reputation and pose a legal risk. If it isn't possible to avoid, the employees responsible for the contract must work with BC Hydro's procurement professionals and the Ethics Officer or Code Advisor (if applicable) to address any actual or apparent conflict or unfair advantage.

Examples of actual or apparent conflicts of interest or unfair advantage that may arise because of the nature of the contract:

- A contract for administration or management of other BC Hydro contracts – If the contractor administers or manages the contract of another BC Hydro contractor that's a competitor, there's a conflict of interest if it has access to the competitor's proprietary information or methods for carrying out the contract or if there's an opportunity for the contractor to treat the competitor unfairly. It's also a conflict of interest if the contractor administers or manages the contract of a related company on behalf of BC Hydro when it has the opportunity to benefit the related contractor. These situations can't always be avoided but, with help from BC Hydro's procurement professionals and the Ethics Officer or Code Advisor (if applicable), measures can be taken to mitigate the conflicts or unfair advantage.
- A contract to carry out purchasing functions including preparing all or part of the tenders or RFPs, conducting the tendering or RFP process, recommending award of contracts, sitting on an evaluation committee – If the contractor has been engaged to prepare the scope of work or services for a contract upon which it, or any related business, is considering submitting a bid or proposal, the contractor has a conflict of interest. This conflict is typically addressed by excluding the contractor from submitting a bid or proposal for the tendering or RFP process.
- Contract to assess BC Hydro's needs – If the contractor has been engaged to evaluate BC Hydro's needs in respect of something such as the adequacy of equipment or the organization and management of a particular business function, and the contractor is in the business of supplying or refurbishing equipment or providing business management services, the contractor has a conflict of interest. This is typically addressed by excluding the contractor from being eligible to supply the equipment or services that determine BC Hydro needs.

These examples don't apply where a BC Hydro subsidiary is the service provider performing work for BC Hydro.

Personal relationships at work

We can't have influence over the hiring, supervision, evaluation or promotion of anyone we have a close personal relationship with. This includes influence over the hiring, evaluation or retention of contractors.

Sometimes, a close personal relationship develops between two employees in a reporting line, or in other circumstances that may result in an actual or apparent conflict of interest. When that happens, both employees must report the existence of the relationship immediately to their manager or senior manager. Failure to report the relationship promptly may result in corrective action that could include termination of employment. So if you're in doubt as to whether a close personal relationship could give rise to a conflict of interest, err on the side of disclosure and seek advice.

When advised of a close personal relationship that could give rise to an actual or apparent conflict of interest, BC Hydro will work with the individuals to address the conflict.

Q&A's: personal relationships in the workplace

Q1: What does a close personal relationship include?

A1: Close personal relationships include close friends and relatives (meaning individuals related by birth or marriage, or otherwise considered part of your family) and other intimate relationships.

Q2. Will BC Hydro ever permit an employee to be employed in a position where they report to someone they have a close personal relationship with (including an intimate relationship)?

A2. Generally, this isn't permissible where a direct reporting relationship exists. If the reporting relationship is indirect, it may be possible to eliminate the appearance of a conflict by taking measures to ensure the manager had no influence or participation in decisions affecting the hiring, evaluation or any terms and conditions of employment for the employee he or she is involved with. Be open and honest when these relationships develop. Only then can BC Hydro attempt to find a way to reduce the potential for conflict.

Q3. Does this prohibit relationships between me and someone I work with, but don't report to?

A3. Generally, no. However, employees who are in close personal relationships are expected to behave professionally and not allow personal conflicts or difficulties to impact working relationships or their work environment.

Q4. Is an employee required to disclose a sensitive close personal relationship with another employee in the reporting line where the employees wish the relationship to remain private?

A4. Yes. The employees must disclose the relationship but may do so discretely. BC Hydro will do what it can to protect the privacy of the employees involved.

5 Conduct

Safety and environment

Directors and employees have legal and moral responsibilities for safety and the protection of the environment.

We believe that all injuries are preventable and our goal is zero injuries. We want a safe, healthy and harassment–free workplace that ensures safe work practices and conditions. To help us achieve this, we must comply with the Life Saving Rules and applicable safety policies and practices. Take prudent precautions in every activity, not just to ensure personal safety, but also to avoid creating a danger to others.

Minding our environmental footprint is a key part of BC Hydro's vision and values. We're each responsible for helping ensure work aligns with our environment and social responsibility policies.

We raise concerns or stop work any time we feel our safety or the safety of others is at risk. If we don't comply with safety expectations, our conduct will be managed in a manner consistent with BC Hydro's Just Culture Principles.

Compliance with the law

We're expected to know and comply with laws and regulations applicable to our work. Avoid situations that could be perceived as unlawful or indicate a casual attitude towards the law. Don't commit or condone an unlawful act in connection with your work, and don't direct or encourage others to do so. Failure to comply with applicable laws and regulations in connection with our work may result in discipline that could include termination of employment.

Similarly, we must not destroy a record contrary to BC Hydro's policies and procedures, or create or condone the deliberate creation of a false record. Please see BC Hydro's Records and Information Management Policy for more details.

We're all under public scrutiny. If you engage in unlawful activities in your personal life outside of the workplace that could have a negative impact on BC Hydro's business, reputation or work environment, you'll be accountable for those actions and subject to discipline that could include termination of your employment.

When in doubt about the laws and regulations that apply to our work, or if any of us have questions about these laws, contact BC Hydro Legal Services.

What's an unlawful act? Unlawful acts aren't limited to illegal acts under the *Criminal Code*, but include acts or omissions contrary to any applicable statute or regulation.

Community

RELATIONSHIPS

BC Hydro's operations may affect the lives and interests of our customers, First Nations communities, the communities where we work and the broader public. When you represent BC Hydro, you're expected to uphold our values and this Code, respect social and cultural perspectives, and treat everyone with dignity and respect.

RESPECTFUL WORKPLACE

BC Hydro is committed to providing all employees with a workplace where everyone is treated with dignity and respect. Our workplaces should be free from harassment, discrimination and offensive conduct and remarks.

BC Hydro's Respectful Workplace Policy promotes respectful behaviours in the workplace. We must uphold the Respectful Workplace Policy and BC Hydro's obligations under human rights and occupational health and safety legislation. Disrespectful behaviour contributes to a negative workplace and it won't be tolerated.

Outside activities and conduct

We respect your personal privacy and activities outside of work. Remember, however, that your actions at work and in your personal life have the potential to negatively affect BC Hydro's business, reputation and work environment and you're accountable for those actions.

Q&A's: outside activities

Q1. I grow marijuana. Do I need to disclose it?

A1. Yes. BC Hydro has had long standing operational, financial, health and safety, and reputational issues with illegal, and sometimes legal, marijuana cultivation. Additionally, some of us have job duties that would be in conflict with our personal interest in marijuana cultivation. When you disclose the cultivation, you can work with BC Hydro to address any potential conflict or health and safety risks associated with your activities.

Q2. Can I get in trouble at work for comments I make on Social Media (e.g. Facebook, LInkedIn or Twitter)?

A2. What you write on social media is your private business most of the time. But, if you bring BC Hydro into your social media activities by posting things that may negatively affect BC Hydro's reputation, imply that your personal position is BC Hydro's position, offend or harass your co-workers, make it difficult for you to do your job effectively, or reveal non-public or third party personal information you obtained through your work at BC Hydro, you may be subject to discipline for your activities, up to and including termination. Please see the Acceptable Use policy for more information.

Q3. Does the Code prohibit me from participating in a public protest rally after work?

A3. No. However, you must take care to ensure separation between your personal activities and your association with BC Hydro. This means you need to avoid giving the impression that you are representing BC Hydro at the rally and avoid doing anything that could negatively affect BC Hydro's reputation. For example, if you wear your BC Hydro branded clothing or equipment or publicly identify yourself as a BC Hydro employee while at the rally, your conduct at the rally may negatively affect BC Hydro's reputation.

Alcohol and drugs

Your judgment and ability to perform your job must not be influenced by alcohol or drugs. If you're aware that a worker is under the influence of alcohol or drugs, you must take action to prevent that worker from working. Discuss with your manager the use of any over-the-counter or prescription drugs you are taking or plan to take that have the potential to impair your ability to perform work safely. Managers are responsible to ensure your work assignments are adjusted as necessary.

You must never possess or consume illegal drugs while engaged on BC Hydro business.

The Alcohol & Drug Policy applies to all employees of BC Hydro while they are engaged on BC Hydro business, whether working on BC Hydro premises and worksites or those of others, while they represent BC Hydro, and when operating vehicles and equipment on behalf of BC Hydro.

If you're struggling with addiction, BC Hydro has a variety of programs available to assist you in overcoming addictions.

Q&A's: Alcohol & Drugs

Q1. I use marijuana to treat a medical condition. Can I use it during work hours? Do I need to disclose it?

A1. Marijuana may affect your ability to work safely and productively. If you have been prescribed marijuana by a medical doctor, you must advise your manager of the specific impairment, effects or limitations that result from the medication and any effects it may have on your ability to carry out your job duties safely and efficiently. We can work with you and your medical doctor on any work modification or alternate duties that may be required to accommodate your medical requirements, while making sure safety and productivity are not compromised.

If you haven't been prescribed marijuana by a medical doctor, you're prohibited from using or possessing marijuana while on BC Hydro business, premises and worksites or to report to work under the influence of marijuana.

Q2. I suffer from seasonal allergies and take over the counter anti-histamines. Do I need to disclose it?

A2. Maybe. Many anti-histamine medication contains warnings like "May cause drowsiness" or "Do not drive or use heavy machinery". These are clear warnings that your ability to work safely and productively may be compromised when you take the medication. As with the example above, you must advise your manager of the potential for impairment. Disclosure allows your manager to understand any possible functional impacts to your duties from the medication so BC Hydro can accommodate your medical requirements, while making sure safety and productivity are not compromised.

Professional qualifications

You must hold any qualifications and licences required by your position (as confirmed by your manager) and your profession. This includes keeping required qualifications and licences current and valid. If you're a member of a recognized profession and that membership is required for your position and supported by BC Hydro, you're expected to:

- keep abreast of professional developments in your field;
- perform your duties in accordance with the recognized standards of that profession, and
- abide by any code or standards of conduct adopted by your professional association.

If an employee's professional obligations or standards are in conflict with this Code or with BC Hydro's directions to the employee, the employee should promptly notify their manager or the Ethics Officer.

6 Information and property

Confidential information

PROTECTION OF NON-PUBLIC INFORMATION

All non-public BC Hydro data and information is confidential and the property of BC Hydro. This includes information relating to BC Hydro's business, employees, customers, facilities, operations, contractual relationships, shareholder relationships, technology, day to day events, and so on. You must not deliberately or inadvertently disclose confidential information to anyone except as permitted by BC Hydro's applicable policies or procedures or as required by law.

If you are aware of any inappropriate disclosure of confidential, sensitive or non-public BC Hydro information, you need to notify your manager, BC Hydro's Freedom of information Coordinating Office (FOICO), or the Ethics Officer.

You can't use confidential, sensitive or non-public information obtained because of your relationship with BC Hydro for personal benefit, including the benefit of friends and relatives, or in any way that could be detrimental to BC Hydro. Make sure confidential information is stored safely and securely to prevent unauthorized access.

When our business requires us to share confidential, sensitive or non-public information with someone outside of BC Hydro, we must ensure that the proper agreements (such as nondisclosure or confidentiality agreements) or other arrangements are in place to protect and safeguard this information.

You may also have access to third party confidential, sensitive or non-public information in the course of your work for BC Hydro. Don't disclose that information to anyone except as permitted in any applicable agreements or arrangements with the third party or as required by law.

What information is confidential?

If the answer is "yes" or "possibly" for any of the following questions, the information should be treated as confidential, until it has been checked with the author of the information, the responsible manager, or FOICO.

- Could sharing the information provide knowledge to someone who would not otherwise have access, or be entitled, to that information?
- If I pass this information on, would I violate the expectations of an employee, customer, or third party that the information would go no further than me? Some considerations include:
  - Was the information provided under the terms of a non-disclosure or confidentiality agreement or a contract that has confidentiality obligations?
  - Is the information business information about a customer or personal information about a customer or employee?
  - Is it reasonable to expect that the information is confidential?
- If I use or distribute this information, could I harm the financial, economic, reputational or other interests of BC Hydro, or a third party? Some considerations include:
  - Is the information of such a nature or kind that we should assume it was provided in confidence (e.g. is it proprietary)?
- Is the information not otherwise public outside of BC Hydro?
- Is the information non-public transmission function information that may be restricted under BC Hydro's *Standards of Conduct (SOC) Policy*?

PROTECTION OF PERSONAL INFORMATION

Take all reasonable steps to protect the privacy of other employees, customers, contractors, and members of the public by safeguarding their personal information. Personal information includes recorded information about an identifiable individual, including that individual's history, background, personal characteristics, preferences, opinions, family status, relationships, and so on. It doesn't include business contact information (i.e. information typically found on a business card).

You're responsible for protecting personal information by keeping it secure and limiting access only to those who 'need to know' it in order to do their job. We're also responsible for understanding and complying with BC Hydro's applicable privacy policies, procedures, practices and systems. Compliance helps BC Hydro and its employees meet their legal obligations under the *Freedom of Information and Protection of Privacy Act* or other applicable legislation.

Familiarity with our policies and procedures that concern privacy, freedom of information, and confidential information will help ensure you don't collect, use, disclose, handle, or dispose of personal information in an unauthorized or unlawful fashion. In addition, employees must complete BC Hydro's privacy training annually.

USE OF INFORMATION FOR INVESTMENTS

In your work for BC Hydro, you may become aware of non–public information that could affect the value of investments and financial interests. None of us may disclose that information to any third party or use that information for our personal advantage or the personal advantage of friends, relatives or others. Any such disclosure or use is a breach of this Code and may result in discipline that could include termination of employment. It may also be unlawful and may subject you to severe legal penalties.

Investment information: an example

If you're aware that BC Hydro is about to award a supply contract to Company X and you buy shares in Company X before the knowledge of the contract award is known to the public, you may be 'insider trading', which means buying or selling securities on the basis of 'inside' knowledge not available to the public. There are severe penalties for violations of legislation prohibiting insider trading. Telling a third party about the pending contract award is also a violation of legislation and subject to severe penalties.

BC Hydro property

USE OF BC HYDRO PROPERTY

You're entrusted with the care, management and cost–effective use of BC Hydro's property and resources, including the use of BC Hydro's name. Don't make significant use of these resources for your own personal benefit or purposes. If you aren't sure whether your use of BC Hydro property for personal purposes is permitted, ask your manager or the Ethics Officer or Code Advisor (as applicable).

COSTS AND EXPENSES

Be cost–conscious and use BC Hydro's resources responsibly. Remember that we are all accountable for keeping our customers' rates low. This means making sure any expenses and expenditures are appropriate to the business purpose, reasonable and necessary, and comply with BC Hydro's applicable policies and procedures.

COMPUTING SYSTEMS AND DEVICES

When using BC Hydro computing and communications systems or devices (such as any device or technology capable of communications, computing, data storage, or system/internet access), use them in a responsible manner according to internal policies and procedures that guide the use of electronic information and tools.

Any information and data created, stored, sent or received using these systems or devices is BC Hydro property. BC Hydro may access and review any of that information and data. Employees must also comply with BC Hydro's Acceptable Use Policy.

Q&A's: use of corporate property

Q1. I'm travelling with a co–worker on BC Hydro business and he wants to go to an expensive steakhouse for lunch because BC Hydro is paying for it. Should we?

A1. Not if there are more reasonable alternatives available. We must be cost–conscious with BC Hydro resources. Always make sure expenses are reasonable, justified and in line with per diem guidelines and/or collective agreements.

Q2. I volunteer for a local charity. We need to distribute flyers to advertise a fundraiser. Can I make 300 copies of fundraising flyers on the copier in my office?

A2. No. We must not use BC Hydro's property for personal use.

Q3. I noticed there are BC Hydro's pool cars in the parkade; may I borrow one for the weekend?

A3. No, you may not borrow BC Hydro's property for personal use. The pool cars are reserved for business use only.

Q4 I have been assigned a laptop computer; can I use the laptop for personal use in the evenings or on the weekends?

A4: BC Hydro's property is to be used primarily for BC Hydro business purposes only. However, employees may use BC Hydro computing and communications networks and devices (including laptops and smart phones) for occasional personal use provided the user complies with applicable policies including the Acceptable Use Policy at all times, and there are no resulting increased costs to BC Hydro.

Q5. BC Hydro is disposing of scrap materials that I would like to use in a home improvement project. Am I permitted to take them home?

A5. No. Scrap materials are BC Hydro property and are disposed of in accordance with BC Hydro policy and procedures.

PHYSICAL PROPERTY

Maintain any BC Hydro property assigned to you in good condition and take all reasonable measures to safeguard it from theft or damage. Any theft of BC Hydro property must be immediately reported to Corporate Security.

Don't take ownership or dispose of BC Hydro property except with approval and in accordance with any guidelines established by BC Hydro.

OWNERSHIP OF WORK PRODUCT

We're often engaged in various types of research or problem solving for BC Hydro. The product of our efforts produced within the scope of our employment belongs exclusively to BC Hydro, whether some or all of the research or problem solving was undertaken while actually at work or not.

Work product includes computer programs, technical processes, inventions, research methods, know–how, reports or articles and any other form of innovation or development. Patents, rights or copyright, as appropriate, must be assigned to BC Hydro.

Post–employment obligations

When you leave BC Hydro for any reason, you have continuing obligations under the Code after your appointment or employment ends, including:

Confidential Information – You must maintain the confidentiality of all BC Hydro confidential, sensitive or non–public information, and that of any third party, as well as personal information in BC Hydro's care and control. You may not make use of or reveal that information unless it becomes a matter of general public knowledge through no breach of confidentiality by you, or is required by law. You can't use confidential or proprietary information obtained through your association or employment with BC Hydro to further your personal interests or the interests of your future employers.

Return of Corporate Property and Confidential Information – On or before your last day of appointment or employment with BC Hydro, you must return any BC Hydro documents, files, records, corporate property and other materials in your possession. This includes all BC Hydro or third party confidential, sensitive or non–public information.

7 Responsibility

Act ethically and be aware of your behaviour, and the perception of your behaviour, in a manner consistent with this Code. This means complying with the letter of the Code and applicable policies and laws but also with their 'spirit and intent'.

We offer employees a supportive and positive culture and we have resources available to assist employees comply with this Code. However, we'll take seriously any failure to comply with this Code and will discipline any employee violating it. A serious violation or repeated violations of this Code may result in termination of employment.

Each employee must review the Code from time to time throughout the year and complete online or in-person Code training annually. BC Hydro's directors and executive team employees must meet with the Code Advisor annually to discuss the Code and to disclose in writing to the Corporate Secretary any personal interests that could result in an actual or apparent conflict of interest.

Integrity, honesty, and trust are key to BC Hydro's success. Anyone who knows or suspects that this Code has been, or is likely to be, breached is required to report it.

Seeking advice, making disclosures and reporting concerns

Familiarity with the Code should help you determine an appropriate course of action if a Code or ethical concern arises. However, it's helpful, and in some cases necessary, to discuss your circumstances with others or to report a concern.

If you need to seek advice, disclose, or report a concern, your resources are described below.

EMPLOYEES

Conflict of Interest or Other Code Concerns

- **Manager**
  Your manager should be your first point of contact, whether you require advice, wish to make a disclosure or report a breach or potential breach of the Code. If you feel unable to discuss an issue with your immediate manager, you should approach the next level of management, a member of BC Hydro's senior management or the Ethics Officer.
- **Ethics Officer – (604-528-3400)**
  We've created a senior managerial position, the Ethics Officer, who provides expert advice on Code related matters, including consistent and clear interpretation of BC Hydro's standards of business conduct and guidelines for conflict of interest. The Ethics Officer oversees the application of the Code and Respectful Workplace Policy, and is responsible for other workplace-related conduct issues. If you're not comfortable speaking with your manager, or if reporting the concern to your manager hasn't resolved the issue, you should report the concern in confidence to the Ethics Officer.
- **Confidence Line – (1-800-661-9675 or www.bchydro.confidenceline.net)**
  If you're not comfortable disclosing to your manager or the Ethics Officer and prefer to report Code and Respectful Workplace issues anonymously, BC Hydro has an externally coordinated reporting service known as ConfidenceLine. You can use it to either verbally report concerns by phone or to submit a written concern via their website. If you use the ConfidenceLine, you can't be identified by BC Hydro unless you choose to make your identity known.

Accounting and Auditing Concerns

Employees must report irregularities or concerns related to accounting or audit practices. These may include financial reporting and compliance matters like any suspected violation of financial reporting or disclosure requirements, fraud or deliberate error in BC Hydro's financial statements or records, asset misappropriation, lack of compliance with BC Hydro's internal financial controls, false statements of directors or employees about financial records, or a failure to fully and fairly report BC Hydro's consolidated financial condition. If you encounter a questionable accounting or auditing practice, you're required to report the issue. Failure to do so is a serious breach of the Code. Report issues first to your manager, and then you and your manager must communicate the concern to the Ethics Officer.

If you're not comfortable speaking with your manager, you can report your concern in confidence to the Ethics Officer directly, or report it through the Confidence Line.

The Ethics Officer will forward the reported information to BC Hydro's Director, Audit Services – without disclosing your name. However, if the Ethics Officer is made aware of a concern involving BC Hydro's Audit Services Group, disclosure will be made directly to the Chair of the Audit and Finance Committee of the Board of Directors. The same is true of reports of this nature submitted through the Confidence Line.

EXECUTIVE TEAM EMPLOYEES AND DIRECTORS

- Code Advisor – to better ensure the neutrality and independence of the expert advice available to the board of directors and executive team, an external advisor, the Code Advisor, has been retained to advise, receive disclosures and, if appropriate, to issue opinions to directors and executive team employees on conflict of interest and other Code matters that arise from time to time.
- Disclosures – At the time of appointment, and annually thereafter, each executive team employee and director will meet with the Code Advisor to discuss any personal interest that the director or executive team employee has that could give rise to a conflict of interest, in order to:
    1) assist the director or executive team employee in determining whether such personal interest could result in an actual or apparent conflict of interest under the Code;
    2) discuss any steps that should be taken to avoid or manage such conflicts of interest, and
    3) keep the record of his or her conflicts disclosures current.

The Corporate Secretary will maintain a record of the disclosures and will update the record with any material changes reported by a director.

After disclosure

EMPLOYEES

If a disclosure or a concern is reported about an actual or apparent conflict of interest or breach of this Code by an employee, the Ethics Officer, together with the employee's manager or senior management will decide whether the matter requires further investigation or action. If an investigation is conducted, they will also select the best structure and process for the investigation.

Managers should inform the Ethics Office of any Code or conflict of interest related disclosures or reports made by or about employees as well as any outcomes associated with the disclosure or report.

Managers will monitor their employees' duties and responsibilities in consideration of any actual or apparent conflicts of interest of which the manager is aware. If a manager considers that an employee's particular duty or responsibility could result in an actual or apparent conflict of interest, the manager may assign that responsibility to another employee.

An employee with an actual or apparent conflict of interest related to a matter should, in addition to disclosing it, avoid influencing or participating in any BC Hydro decisions or other actions that could be affected by the actual or apparent conflict. In particular, the employee should excuse himself or herself from discussions or communications with anyone on the matter. The employee and the employee's manager will record the recusal, and the employee shouldn't be involved in the matter or receive any documents or information about it.

If the disclosure or report concerns an auditing or accounting concern then, once the Director, Audit Services receives information from the Ethics Officer, he or she will perform a preliminary investigation to establish the validity and materiality of the information. The Director, Audit Services will report all auditing or accounting disclosures made under this Code to the Audit and Finance Committee of the board of directors on a quarterly basis. The Audit and Finance Committee of the board of directors of BC Hydro will review the quarterly report from the Director, Audit Services and direct further investigation where required.

We expect that most decisions about the application of the Code to employees will be resolved at an early stage. Early stage resolution involves an employee's direct manager as well as the Ethics Officer and BC Hydro human resources personnel, if required. If there is no resolution at this stage, the matter will be elevated to a more senior level in the employee's business group and within Human Resources.

DIRECTORS

The Corporate Secretary will assist directors to fulfill their obligations under the Code (such as conflict of interest issues) by relying on written annual disclosures of personal interests submitted by directors to the Corporate Secretary. This assistance will include alerting a director to business coming before the board of directors (or board committee) that might raise actual or apparent conflicts of interest for that director. If a director considers that an actual or apparent conflict of interest exists, the Corporate Secretary will not circulate related materials to that director. A director in this situation needs to notify the Board Chair (and Committee Chair, as applicable) of the situation and avoid any involvement with the item of business, including attending any meeting where it is being discussed.

If this occurs, the Corporate Secretary will record the directors' recusal in the minutes of the meeting. The director will only be provided with minutes of the meeting that record the decision made respecting that subject matter but not minutes detailing any related discussion.

EXECUTIVE TEAM EMPLOYEES

The Corporate Secretary will provide copies of executive team employee's written annual disclosures of any personal interests to the CEO, and will monitor Board business related to these disclosures in the same manner as described above regarding directors. If the CEO considers that a particular executive responsibility could result in an actual or apparent conflict of interest for an executive team employee, the CEO may assign that responsibility to another executive team employee.

An executive team employee with an actual or apparent conflict of interest related to a matter should, in addition to disclosing it, avoid influencing or participating in any BC Hydro decisions or other actions that could be affected by the actual or apparent conflict, including excusing himself or herself from discussions or communications with employees and the Board on the matter. The recusal will be recorded in any minutes that are maintained, and the executive team employee should not receive any information or documents relating to the matter.

Exemptions

An exemption from the requirements of the Code may be granted in appropriate circumstances, if it's in the best interests of BC Hydro. The CEO may grant exemptions for employees, the Board Chair may grant exemptions for the CEO and directors, and the Governance and Human Resources Committee of the Board may grant exemptions for the Board Chair. We expect that circumstances giving rise to an exemption will arise rarely. In any case, an exemption will allow the continuation of circumstances that could otherwise be an actual or apparent conflict of interest under this Code or could breach this Code, although conditions may be attached to an exemption.

The exemption procedure is intended to allow BC Hydro to relieve you from complying with the conflict of interest or other Code requirements in circumstances where the benefit of the your involvement in a decision or action is in the best interests of BC Hydro, despite the actual or apparent conflict that arises from your personal interest. The exemption procedure also allows BC Hydro to waive compliance with other Code provisions where it's in the best interests of BC Hydro in the circumstances.

Any individual requesting an exemption is responsible for making full disclosure of all relevant facts and circumstances – even if they don't appear to support the exemption request. Full disclosure permits an evaluation of whether BC Hydro's best interests are being served by approving a request for an exemption. In addition to requiring internal approval by the CEO, Board Chair or Governance and Human Resources Committee, exemptions must also be approved by the Minister responsible for the Public Sector Employers' Council (see *Standards of Conduct Guidelines for the B.C. Public Sector*) .

Confidentiality and non-retaliation

The privacy of anyone who seeks advice or discloses a breach or potential breach under the Code will be respected by management of BC Hydro as much as is possible in the circumstances.

Any disclosures or reports under the Code will be treated as confidential and will only be disclosed if absolutely necessary (for example where there is a threat of serious harm). This confidentiality is subject to all laws, which may oblige us to disclose information. In addition, if you've made a report to the Ethics Officer or Code Advisor, you may be contacted if additional information is required for the investigation.

We will not permit any individual who, in good faith, has made a disclosure about another person or party having breached or potentially breached the Code to suffer any adverse consequences as a result. For any employee concerned about possible retaliation or reprisals for reporting an issue, the Ethics Officer can, on request, monitor the circumstances on your behalf and report any concerns to the executive responsible for Human Resources on a confidential basis.

First printed February 2000

Reprinted with clarifications/amendments on following dates:

March 2004

February 2006

June 2008

August 2009

May 2011 (electronic distribution only)

September 2011 (electronic distribution only)

November 2014 (electronic distribution only)

February 2016 – Revised Code (electronic distribution only)

February 2016 – Separated the Contractor Standards for ethical conduct

June 2016 (electronic distribution only)

Contractor standards for ethical conduct

In these Standards:

"**BC Hydro**" means BC Hydro and Power Authority or any of its subsidiaries that has entered into the Contract.

"**Contract**" means a contract with BC Hydro in which these Standards are included directly or by reference as a term or condition.

"**Contractor**" means the contractor, consultant, supplier or business associate who has a Contract.

"**Owner**" means any person who, individually or together with relatives, directly or indirectly owns 20% or more of the voting rights of the Contractor.

February 2016

BCH15-117b

BC Hydro
Power smart

1. At all times in the course of its performance of the Contract, the Contractor will conduct itself with fairness, integrity and honesty.

2. At all times during the term of the Contract, the Contractor will avoid any actual, or apparent conflict of interests, in which its interests outside of the Contract (including any engagements the Contractor may have with third parties), and its obligations to BC Hydro under the Contract and these Standards conflict.

3. The Contractor will promptly disclose to BC Hydro in writing, to the best of its knowledge, any actual or apparent conflicts between its interests and those of BC Hydro during the term of the Contract, including:

   (a) the name of any current director or employee of BC Hydro who is an Owner, or representative of the Contractor;

   (b) any business relationship that the Contractor or any of its Owners or officers has with a director or officer of BC Hydro or with an employee of BC Hydro who may have actual or apparent involvement in any BC Hydro procurement process, or the Contract; and

   (c) the name of any director or employee of BC Hydro who is connected by frequent or close association to the Contractor, any of its Owners or officers, or any representatives of the Contractor who may have actual or apparent involvement in any BC Hydro procurement process, or the performance or administration of the Contract.

   For the purposes of this section, BC Hydro's interests include non-economic considerations such as reputation.

4. In addition to disclosure required above, the Contractor will take any steps reasonably required by BC Hydro to address or mitigate any actual or apparent conflict of interest.

5. Subject to the terms of the Contract, the Contractor will keep confidential all non-public, confidential information provided to it by BC Hydro or developed during performance of the Contract. The Contractor will not use that information for any purpose unrelated to performance of its obligations under the Contract.

6. If BC Hydro gives the Contractor access to any BC Hydro property during the term of the Contract, the Contractor will use that property solely for purposes of the Contract.

7. The Contractor will not attempt to secure preferential treatment with BC Hydro by offering gifts, entertainment, or benefits to BC Hydro directors or employees. Reasonable gifts, entertainment, or benefits common to business relationships, as described in the BC Hydro Code of Conduct, are acceptable.

8. Unless the Contractor has the express permission of BC Hydro, the Contractor will not solicit or recruit any BC Hydro employee during the term of the Contract. This obligation doesn't prevent the Contractor from hiring a BC Hydro employee who responds to a public and broadly issued job advertisement without prompting or encouragement from the Contractor.

9. The Contractor must treat its employees and subcontractors performing work under the Contract respectfully and in a manner free of discrimination and harassment. The Contractor will provide those employees, and subcontractors with a safe and healthy workplace.

10. The Contractor and its employees and subcontractors must treat individuals they encounter in the course of performing work under the Contract respectfully and in a manner free of discrimination and harassment.

11. When the Contractor is participating in any public discussions or taking a position of leadership in other organizations, it must not represent itself as a spokesperson of BC Hydro unless BC Hydro has specifically retained or instructed the Contractor to act in that capacity.

Contractors who would like further information or advice on the application of these Standards are encouraged to speak to BC Hydro's contract representative.

A Contractor's failure to adhere to the provisions of these Standards may be a breach of Contract and could result in termination of the Contract.

14.0 C. BC HYDRO APPROVAL AND OVERSIGHT CONTROLS AND PROCESSES

Reference: ORGANIZATIONAL STRUCTURE
Exhibit B-3, Section 2.1, pp. 3-5
Context for BC Hydro's SAP strategy development

BC Hydro states on page 3 of its Consolidated Information Filing:

During 2007 and 2008, BC Hydro began to focus on its IT&T [Information Technology & Telecommunications] strategy in anticipation of changing business needs at BC Hydro and in particular, an increasing portfolio of capital projects and maintenance work programs. BC Hydro had a decentralized IT&T management structure at that time.

1.14.5 Please describe BC Hydro's reporting structure for the delivery of capital projects and IT&T capabilities. What categories and level of details of information are shared from the lower levels of the IT&T organization up to and including executive leadership?

RESPONSE:

A Technology Monthly Executive Report is currently prepared and distributed to executive team members and includes information on the financial and operational status. A summary of project delivery is prepared and included as a section of this report.

Please refer to BC Hydro's response to BCUC IR 1.21.1 and BCUC IR 1.21.2 for details on project and portfolio reporting.

14.0 C. BC HYDRO APPROVAL AND OVERSIGHT CONTROLS AND PROCESSES

Reference: ORGANIZATIONAL STRUCTURE
Exhibit B-3, Section 2.1, pp. 3-5
Context for BC Hydro's SAP strategy development

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During 2007 and 2008, BC Hydro began to focus on its IT&T [Information Technology & Telecommunications] strategy in anticipation of changing business needs at BC Hydro and in particular, an increasing portfolio of capital projects and maintenance work programs. BC Hydro had a decentralized IT&T management structure at that time.

1.14.6 In what forms do reporting and information sharing occur?

RESPONSE:

Please refer to BC Hydro's responses to BCUC IR 1.21.1 and BCUC IR 1.21.2.

14.0 C. BC HYDRO APPROVAL AND OVERSIGHT CONTROLS AND PROCESSES

Reference: ORGANIZATIONAL STRUCTURE
Exhibit B-3, Section 2.1, pp. 3-5
Context for BC Hydro's SAP strategy development

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1.14.6 In what forms do reporting and information sharing occur?

1.14.6.1 Are minutes documented for all meetings and stored for later review? If so, who reviews the minutes?

RESPONSE:

Meeting minutes for IT projects are typically documented for steering committee meetings and gate reviews. Other meetings may have minutes prepared at the discretion of the project manager and project initiator.

In the case of steering committee meeting minutes, these are typically circulated to steering committee members for review and approval, and saved on the project SharePoint site along with meeting agenda and materials.

All IT projects are required to commission a SharePoint site based on a site template with standard document directories and lists. It is expected that all project documents, including minutes and document revisions, are stored on the project SharePoint site.

Gate review meeting minutes are saved on the PMO SharePoint site and circulated to all attendees for review. The gate review minutes include presentations made by the applicant project.

Please refer to Attachment 18 of the Consolidated Information Filing, section 3.2 for more information regarding ITDSP gate review logistics, and section 6 for more information regarding project SharePoint sites and document archiving.

14.0 C. BC HYDRO APPROVAL AND OVERSIGHT CONTROLS AND PROCESSES

Reference: ORGANIZATIONAL STRUCTURE
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Context for BC Hydro's SAP strategy development

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1.14.6 In what forms do reporting and information sharing occur?

1.14.6.2 Please describe the criteria, if any, which are used to determine the amount of detail that is escalated to the top of the organization. Please also explain if there is a formal or informal escalation procedure.

RESPONSE:

Please refer to BC Hydro's responses to BCUC IR 1.21.1 and BCUC IR 1.21.2. Please refer to BC Hydro's response to BCUC IR 1.21.4 with regard to escalation.

14.0 C. BC HYDRO APPROVAL AND OVERSIGHT CONTROLS AND PROCESSES

Reference: ORGANIZATIONAL STRUCTURE
Exhibit B-3, Section 2.1, pp. 3-5
Context for BC Hydro's SAP strategy development

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1.14.7 Please explain how decisions are communicated through the organization and how they are enforced.

RESPONSE:

BC Hydro interprets the decisions being referred to in this question as relating to IT projects.

Decisions related to IT projects and the governance of IT projects are communicated as a matter of course in several ways, including through in-person meetings, or through electronic means via email or other computer software publishing, such as word documents, spreadsheets and powerpoint presentations. Decisions that may materially affect the project scope, schedule, cost or quality of project delivery may be tracked in a decision log on the project SharePoint site.

Decisions on IT projects are enforced through the application of BC Hydro financial policies and the ITDSP framework, as described in section 4 of the Consolidated Information filing, and through the Compliance Management Policy as discussed in BC Hydro's response to CEC IR 1.13.2.

15.0 C. BC HYDRO APPROVAL AND OVERSIGHT CONTROLS AND PROCESSES

Reference: AUTHORIZATION AND GOVERNANCE
Exhibit B-3, Section 4.1, pp. 3-4, 30-31
Oversight of IT&T

On pages 3 and 4 of the Consolidated Information Filing, BC Hydro describes the IT&T management structure during 2007 and 2008 as "decentralized". BC Hydro states: "The Office of the Chief Information Officer (OCIO) was primarily responsible for IT&T policy, strategy, architecture and security, and enterprise-wide systems."

On pages 30-31, BC Hydro states:

An IT&T Governance committee was established in F2009 to focus on ensuring IT&T investments are prioritized, achieve business value, simplify processes, enable reliability and safety goals, and are achievable with minimal risk to the organization. The group included senior managers from the operating groups and corporate groups, and was chaired by the CIO. It was active until January 2011. A Technology Governance Committee of the Executive Team was established in March 2011 whose mandate included oversight of IT&T expenditures…

…In 2016, the Technology Governance Committee was discontinued and the full Executive Team assumed the Committee's responsibilities for oversight of IT&T.

1.15.1 Please provide the names and titles of the members of the Technology Governance Committee at the time it was discontinued.

RESPONSE:

The Technology Governance Committee was disbanded on January 11, 2016. The membership at that time was:

- **Greg Reimer (Chair) – Executive Vice President Transmission Distribution, and Customer Service;**
- **Chris O'Riley – Deputy CEO & Capital Infrastructure Project Delivery;**
- **Cheryl Yaremko – Executive Vice President Finance & Business Services and CFO;**
- **Mark Poweska – Senior Vice President Training, Development, and Generation;**
- **Kip Morison – Chief Information Officer; and**
- **Ray Aldeguer – General Counsel.**

15.0 C. BC HYDRO APPROVAL AND OVERSIGHT CONTROLS AND PROCESSES

Reference: AUTHORIZATION AND GOVERNANCE
Exhibit B-3, Section 4.1, pp. 3-4, 30-31
Oversight of IT&T

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…In 2016, the Technology Governance Committee was discontinued and the full Executive Team assumed the Committee's responsibilities for oversight of IT&T.

1.15.2 Why was the Technology Governance Committee discontinued? Please explain.

RESPONSE:

The Technology Governance Committee was discontinued because it was concluded that, given the strategic importance of IT issues, the full Executive Team should be involved in all strategic discussions related to IT. Following the disbanding of Technology Governance Committee, all annual plans, major strategic initiatives, and significant projects are now brought directly to the Executive Team for discussion and approval as necessary.

15.0 C. BC HYDRO APPROVAL AND OVERSIGHT CONTROLS AND PROCESSES

Reference: AUTHORIZATION AND GOVERNANCE
Exhibit B-3, Section 4.1, pp. 3-4, 30-31
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…In 2016, the Technology Governance Committee was discontinued and the full Executive Team assumed the Committee's responsibilities for oversight of IT&T.

1.15.3 Between January 2011 and March 2011, who or what committee was responsible for corporate IT governance and oversight of IT expenditures?

RESPONSE:

BC Hydro has no record of any meetings of a technology governance committee in February or March of 2011. Please refer to BC Hydro's responses to DIX IR 1.8.0 and BCUC IR 1.15.6.

15.0 C. BC HYDRO APPROVAL AND OVERSIGHT CONTROLS AND PROCESSES

Reference: AUTHORIZATION AND GOVERNANCE
Exhibit B-3, Section 4.1, pp. 3-4, 30-31
Oversight of IT&T

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…In 2016, the Technology Governance Committee was discontinued and the full Executive Team assumed the Committee's responsibilities for oversight of IT&T.

1.15.4 Starting from 2008 and ending at the present day, please describe how the CIO's role and the CIO's delegates and/or direct reports roles have changed in the (a) oversight of IT&T, (b) establishing policy and strategy, and (c) enforcing policy? Please describe and provide a chronology of the changes, if any.

RESPONSE:

The general accountabilities associated with the role of CIO, or the Vice-President of Technology as applicable, have not changed between 2008 and 2016 with respect to (a) oversight of IT&T, (b) establishing policy and strategy, and (c) enforcing policy.

The CIO is accountable for the development and execution of IT&T strategy and plans and as such has the responsibility for project delivery and system operations and sustainment. The CIO is also accountable for the development and enforcement of policies related to IT&T.

However, the scope of work and organizational structure of the IT&T group has undergone a number of changes between 2008 to 2016, as set out in the table below and corresponding attachments. The chronology of changes and associated organization charts highlight that the major functions of the CIO's direct reports have continually evolved to support the accountabilities of the CIO; for example, in response to major changes in focus, such as strengthening the PMO, as well as in response to seeking efficiency in service delivery, such as through centralization of IT&T.

Year	Functions of Direct Reports	State and/or Major Changes	Organization Chart
2008	• **Process Architecture** • **Security Architecture** • **IT Architecture** • **Portfolio Management** • **Business management** • **Business Information Management** • **Service Delivery**	• **Title - Interim Chief Information Officer (January to July)** • **Title - Vice President & Chief Information Officer (July 2008 onwards)** • **Decentralized IT - Each Business Unit was responsible for IT needs subject to CIO policy**	**Attachment 1**
2009	• **Business Information Systems Management** • **Process Architecture** • **Business Management & PMO** • **IT Architecture** • **IT Security & Infrastructure Delivery** • **Enterprise Service Delivery**	**No major change**	**Attachment 2**
2010	• **Business Information Systems Management** • **IT Architecture** • **IT Security Management** • **Business Management & PMO** • **Enterprise Applications** • **Process Architecture** • **Infrastructure and Service Delivery** • **Telecom Service Delivery** • **Digital Experience**	• **Began centralization of IT&T** • **Added Telecom**	**Attachment 3**

Year	Functions of Direct Reports	State and/or Major Changes	Organization Chart
2011	• **Business Group Service** • **Planning & Architecture** • **Enterprise Applications** • **Infrastructure Operations** • **Telecom Operations** • **Business & Projects** • **Office of the Chief Security Officer**	• **Title – Vice President, Technology and Security (October 2011 onwards)** • **Added Physical Security**	**Attachment 4**
2012	• **Office of the Chief Technology Officer** • **Information Technology** • **Technology Infrastructure** • **Technology Project Management** • **Business & Contracts** • **Office of the Chief Security Officer** • **Manager Revenue Assurance**	• **Title – President & CEO, Powertech and Vice President, Technology & Security** • **Added Office of the Chief Technology Officer** • **Added Revenue Assurance** • **Strengthen PMO**	**Attachment 5**
2013	• **Office of the Chief Technology Officer** • **Director Information Technology** • **Senior Program Manager Technology Projects** • **Manager Business & Contracts** • **Office of the Chief Security Officer** • **Revenue Assurance** • **Business Change**	• **No major changes**	**Attachment 6**
2014	• **Generation & Site C Business technology** • **Corporate & Customer Business Technology Lead** • **Applications** • **Technology** • **PMO & Business Services** • **Revenue Assurance** • **Administration**	• **Strengthened PMO in place** • **Physical Security removed from CIO**	**Attachment 7**

Year	Functions of Direct Reports	State and/or Major Changes	Organization Chart
2015	• **Generation & Site C Business technology** • **Corporate & Customer Business** • **Enterprise Applications** • **Technology / CTO Lead** • **PMO & Business Services** • **Security & NERC CIP Planning** • **Revenue Assurance** • **Administration**	• **New CIO**	**Attachment 8**
2016	• **Business Partner Services** • **Planning & Performance** • **Operations** • **Delivery & Contracts**	• **Revenue Assurance removed from CIO** • **Office of the Chief Technology Officer is disbanded** • **Major reorganization**	**Attachment 9**

15.0 C. BC HYDRO APPROVAL AND OVERSIGHT CONTROLS AND PROCESSES

Reference: AUTHORIZATION AND GOVERNANCE
Exhibit B-3, Section 4.1, pp. 3-4, 30-31
Oversight of IT&T

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…In 2016, the Technology Governance Committee was discontinued and the full Executive Team assumed the Committee's responsibilities for oversight of IT&T.

1.15.4 Starting from 2008 and ending at the present day, please describe how the CIO's role and the CIO's delegates and/or direct reports roles have changed in the (a) oversight of IT&T, (b) establishing policy and strategy, and (c) enforcing policy? Please describe and provide a chronology of the changes, if any.

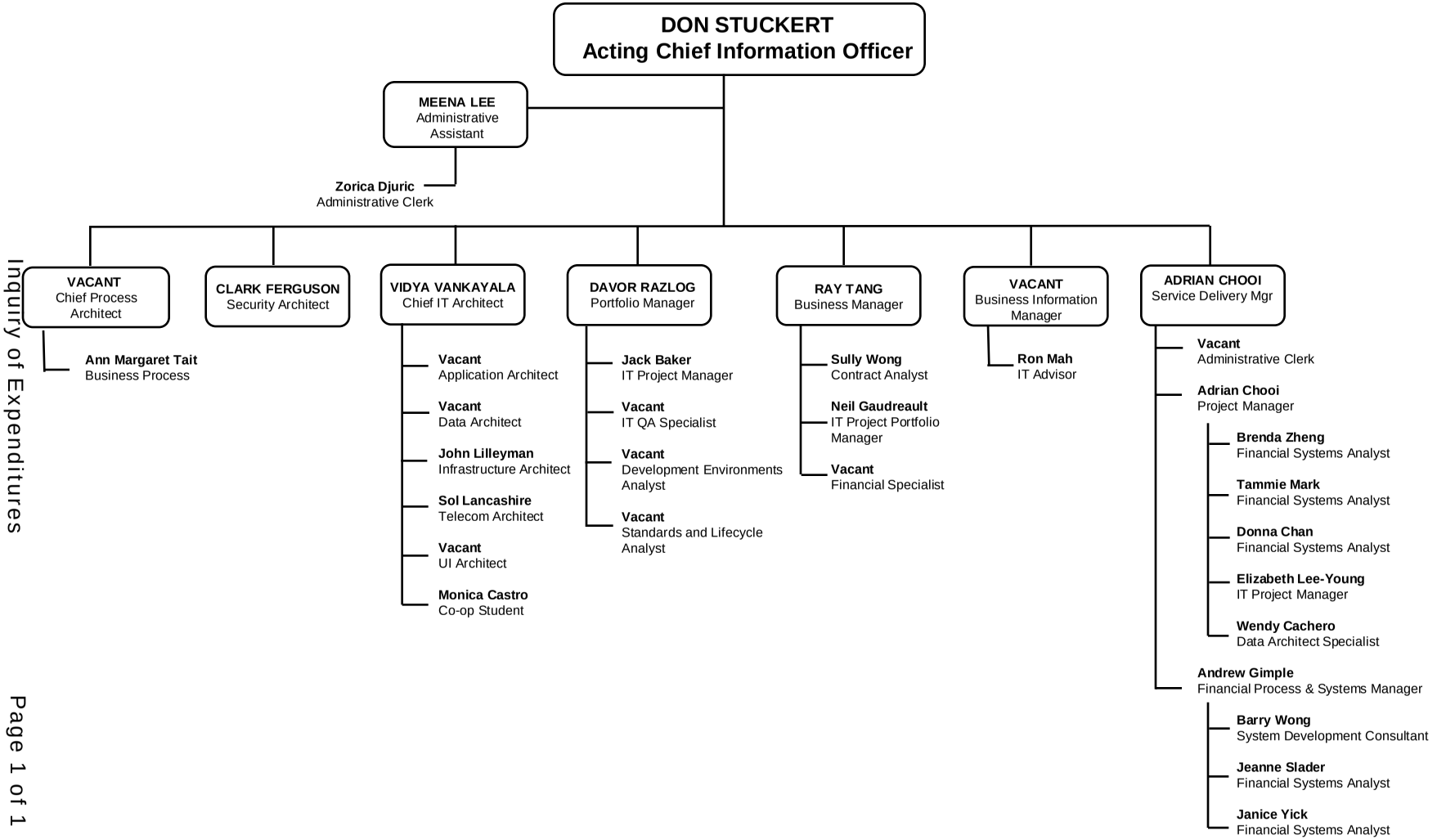
1.15.4.1 If available, please provide organization charts and responsibility assignment matrices (i.e. RACI Charts) to support this response.

RESPONSE:

Please refer to BC Hydro's response to BCUC IR 1.15.4. for organization charts and to BC Hydro's response to BCUC IR 1.14.2 for the RACI chart corresponding to 2016. Completed RACI charts for years prior to 2016 are not available.

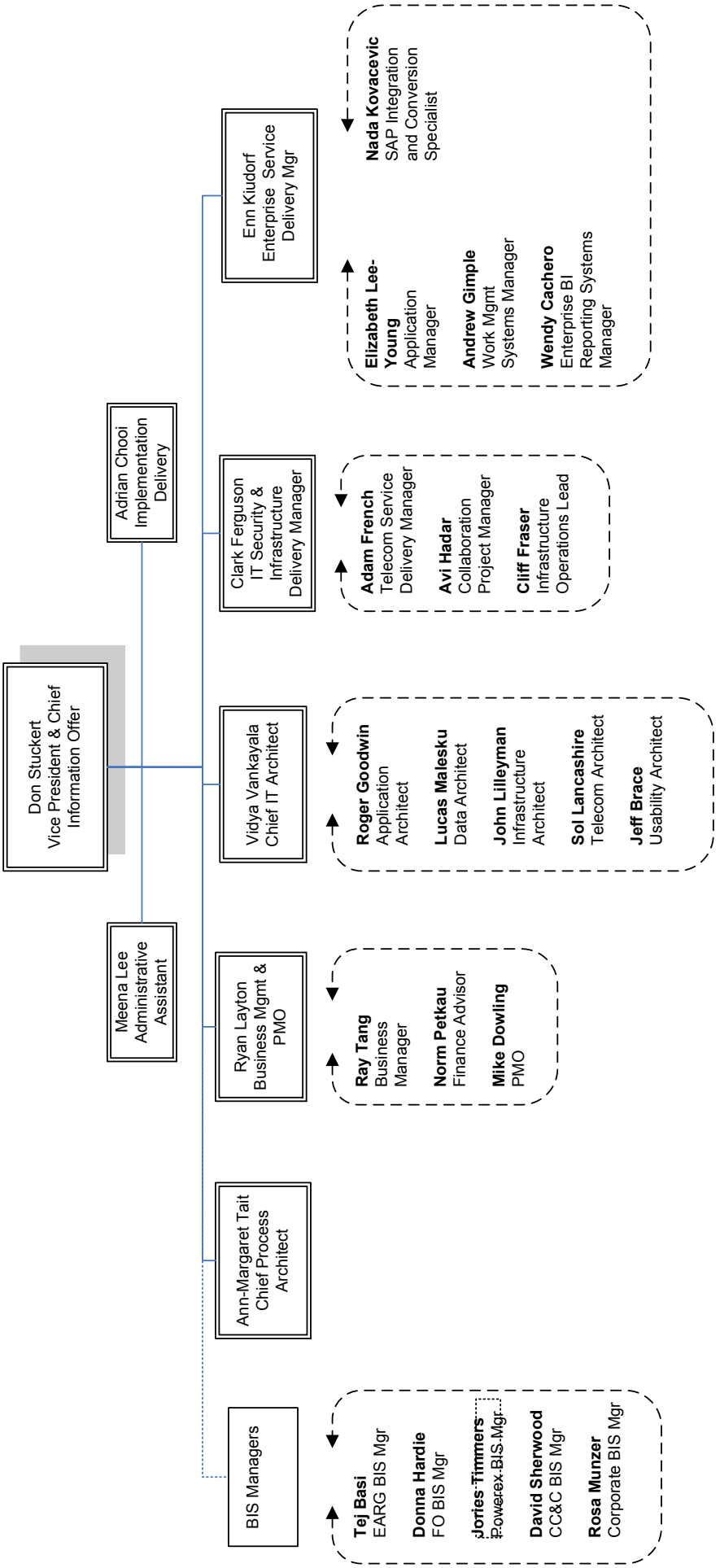
BRITISH COLUMBIA HYDRO & POWER AUTHORITY

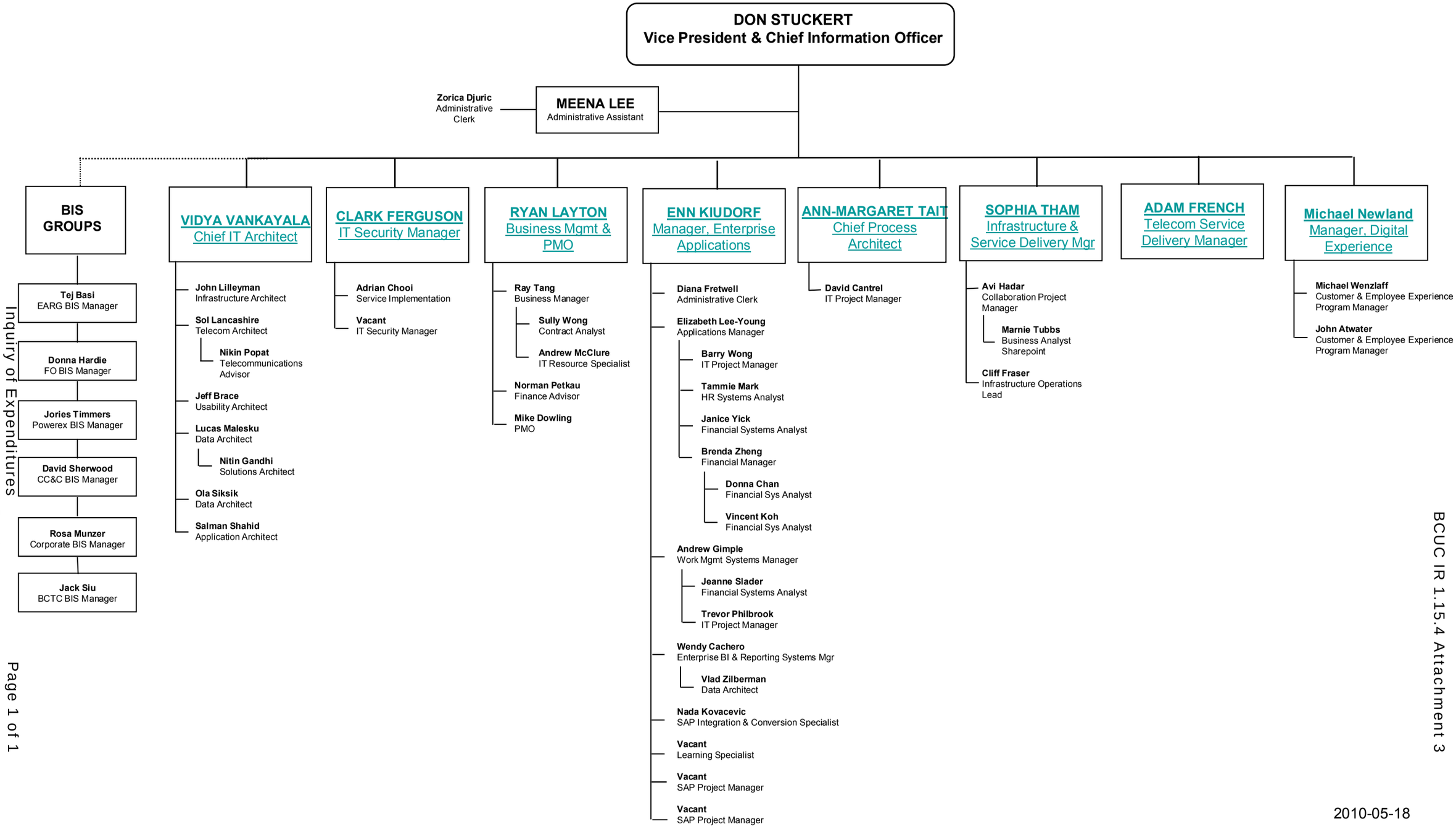
CORPORATE OFFICE
OFFICE OF THE CHIEF INFORMATION OFFICER



Inquiry of Expenditures related to the adoption of the SAP Platform

BCUC IR 1.15.4 Attachment 1

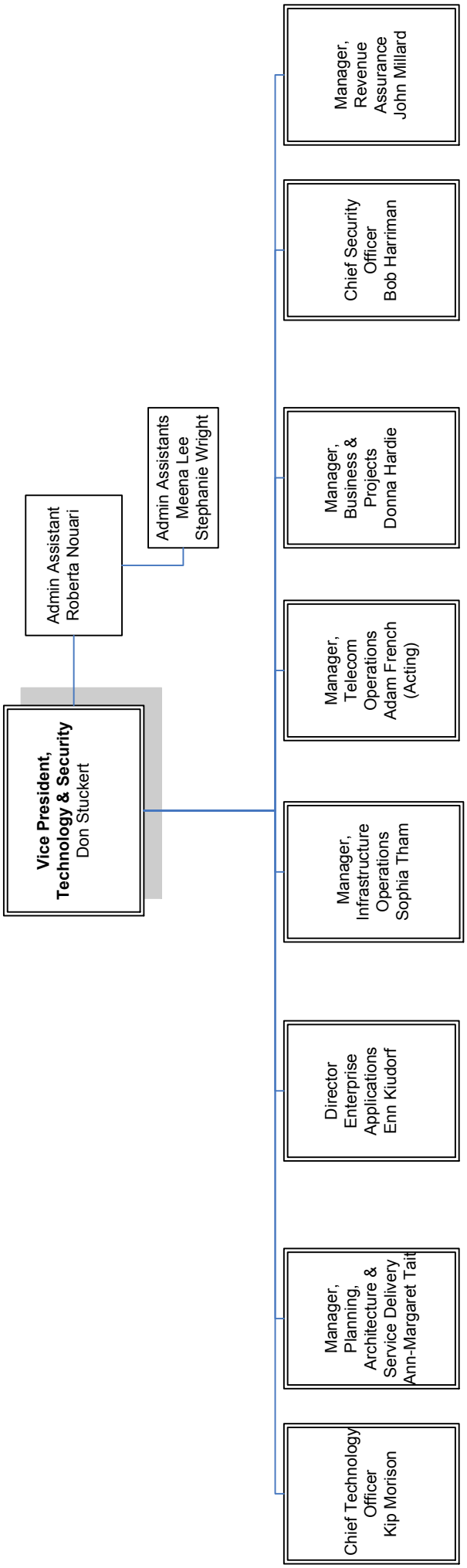

Don Stuckert
Vice President & Chief Information Offer
Meena Lee
Administrative Assistant
Adrian Chooi
Implementation Delivery
BIS Managers
Tej Basi
EARG BIS Mgr
Donna Hardie
FO BIS Mgr
Jories Timmers
Powerex BIS Mgr
David Sherwood
CC&C BIS Mgr
Rosa Munzer
Corporate BIS Mgr
Ann-Margaret Tait
Chief Process Architect
Ryan Layton
Business Mgmt & PMO
Ray Tang
Business Manager
Norm Petkau
Finance Advisor
Mike Dowling
PMO
Vidya Vankayala
Chief IT Architect
Roger Goodwin
Application Architect
Lucas Malesku
Data Architect
John Lilleyman
Infrastructure Architect
Sol Lancashire
Telecom Architect
Jeff Brace
Usability Architect
Clark Ferguson
IT Security & Infrastructure Delivery Manager
Adam French
Telecom Service Delivery Manager
Avi Hadar
Collaboration Project Manager
Cliff Fraser
Infrastructure Operations Lead
Enn Kiudorf
Enterprise Service Delivery Mgr
Elizabeth Lee-Young
Application Manager
Andrew Gimple
Work Mgmt Systems Manager
Wendy Cachero
Enterprise BI Reporting Systems Manager
Nada Kovacevic
SAP Integration and Conversion Specialist



Inquiry of Expenditures related to the adoption of the SAP Platform

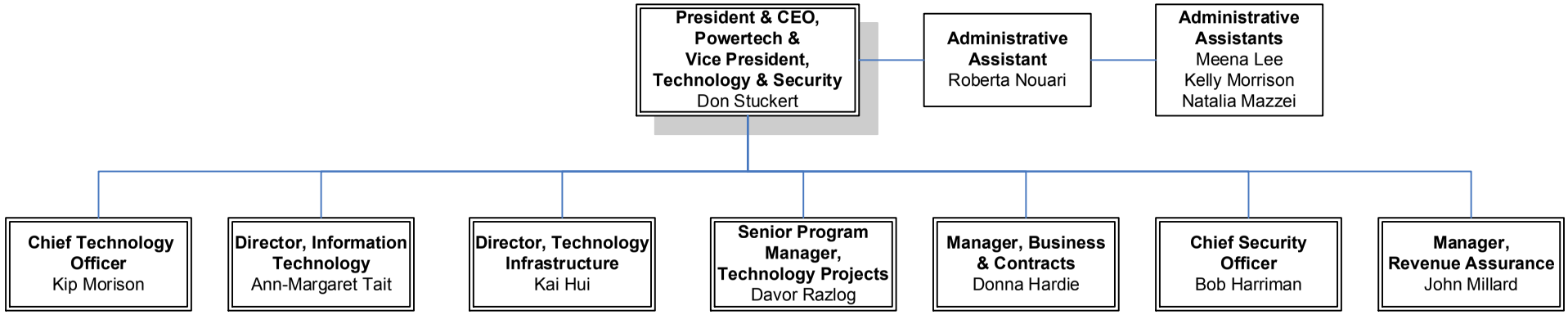
BCUC IR 1.15.4 Attachment 3

2010-05-18


Vice President, Technology & Security
Don Stuckert
Admin Assistant
Roberta Nouari
Admin Assistants
Meena Lee
Stephanie Wright
Manager, Revenue Assurance
John Millard
Chief Security Officer
Bob Harriman
Manager, Business & Projects
Donna Hardie
Manager, Telecom Operations
Adam French (Acting)
Manager, Infrastructure Operations
Sophia Tham
Director Enterprise Applications
Enn Kiudorf
Manager, Planning, Architecture & Service Delivery
Ann-Margaret Tait
Chief Technology Officer
Kip Morison

BC hydro

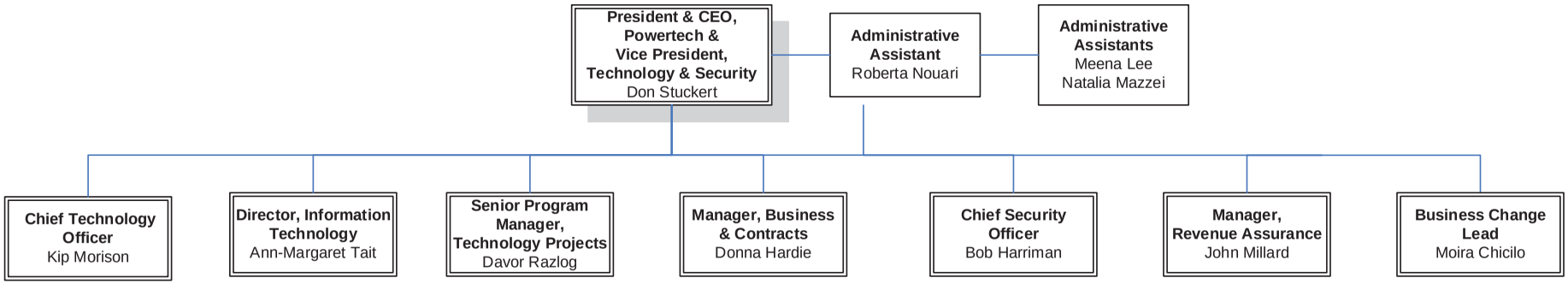
Technology & Security



May 22, 2012

BC hydro

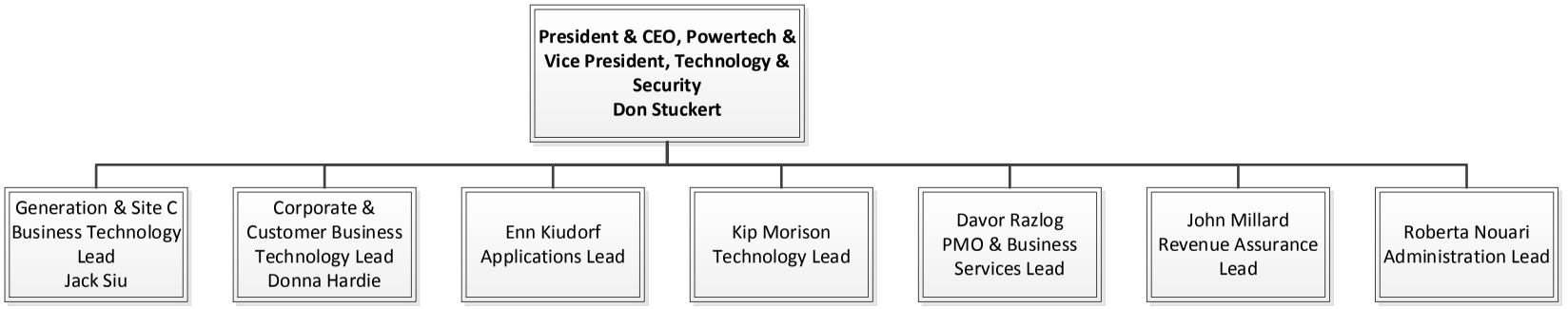
Technology & Security



Jul 8, 2013

BC hydro

Technology



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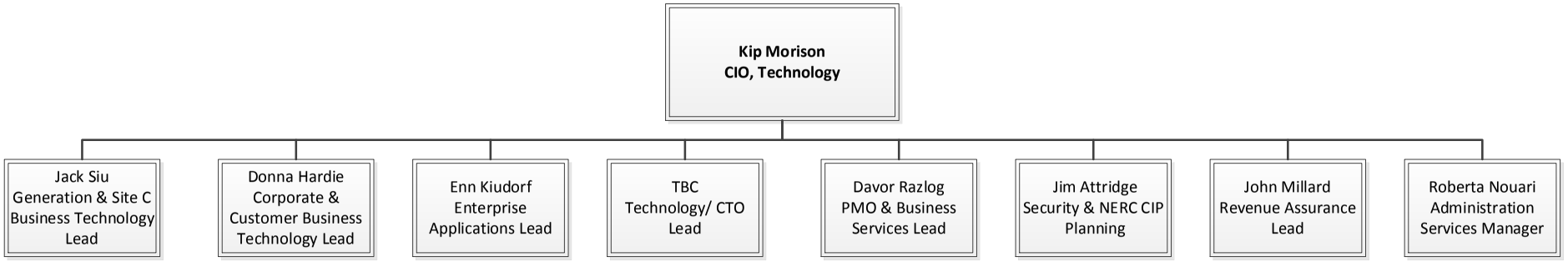
Technology



May 29, 2015

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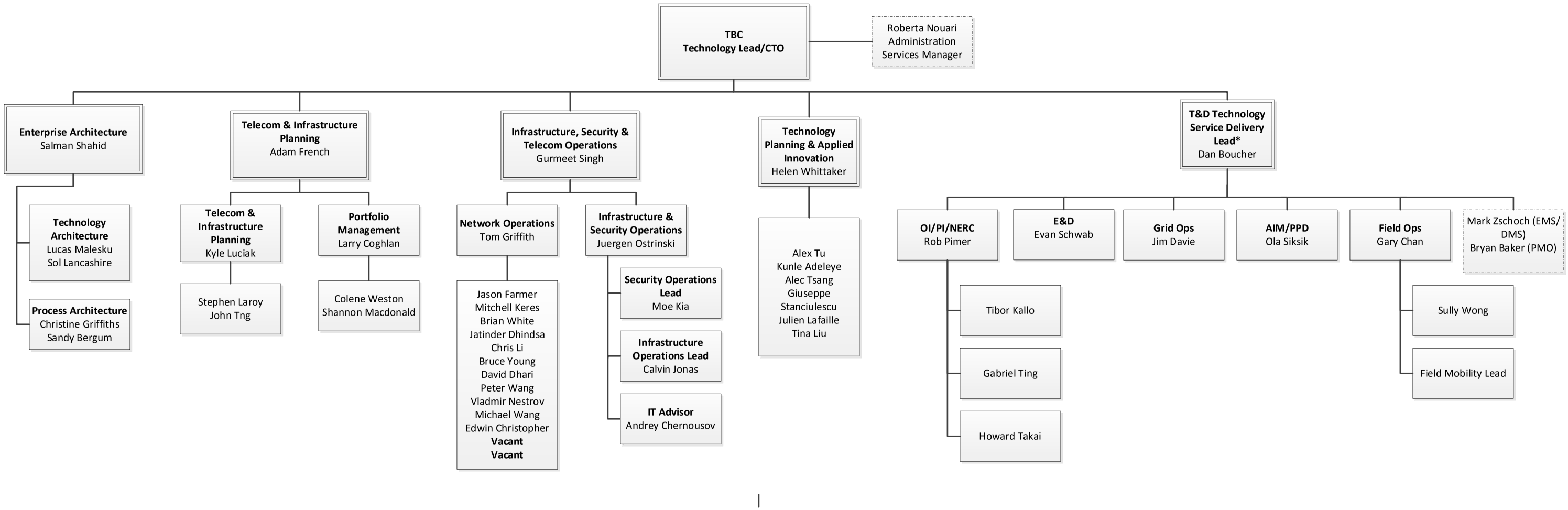
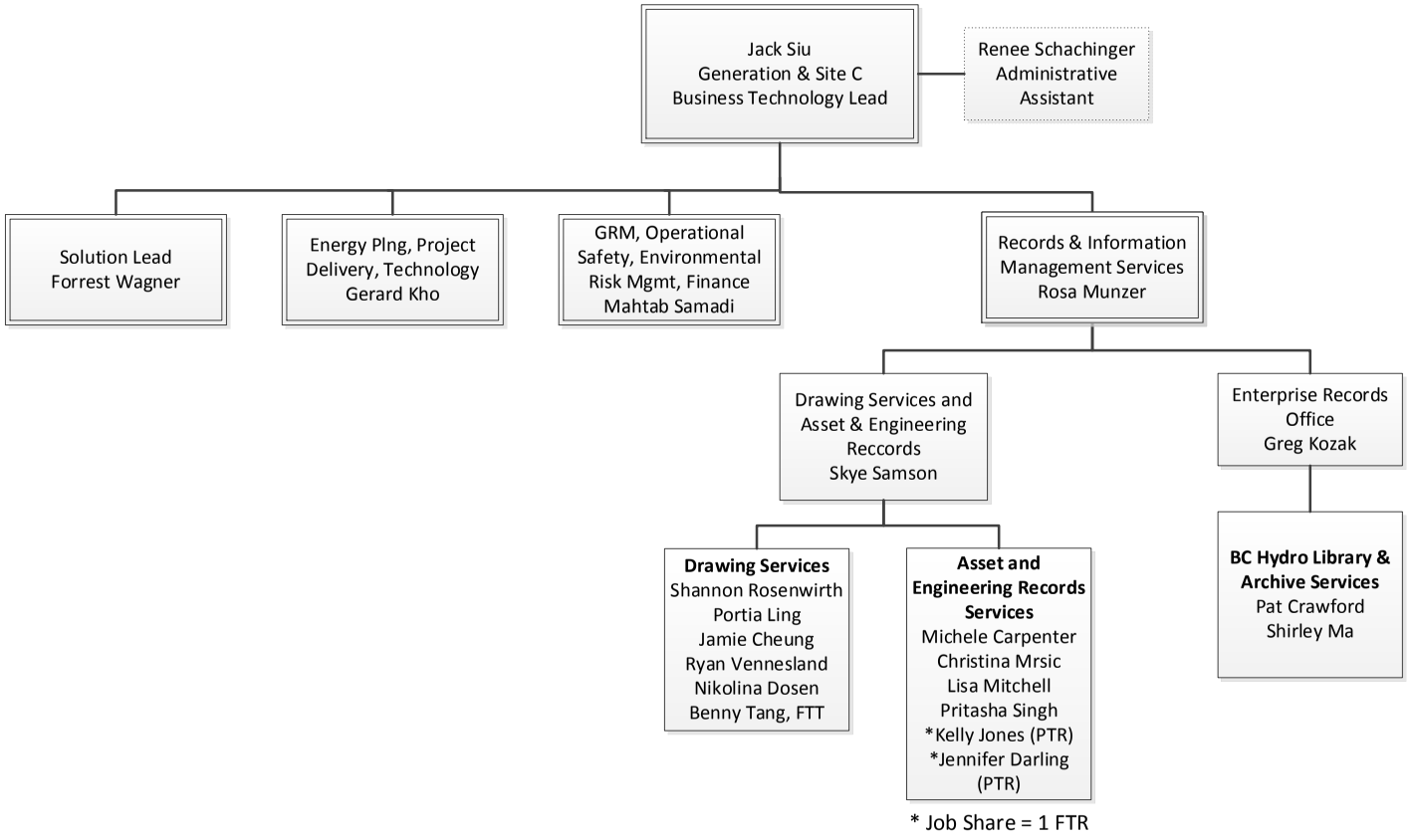
Office of the Chief Technology Officer (OCTO)



June 2, 2015

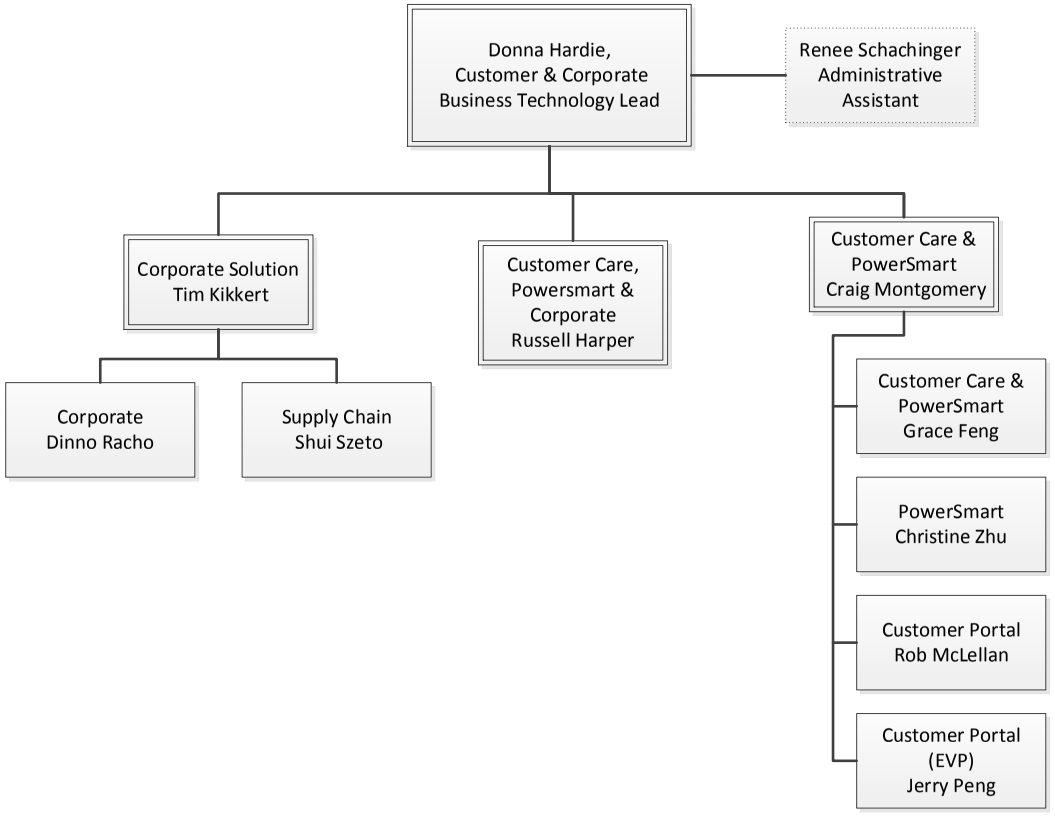
Generation & Site C Services Delivery



* Job Share = 1 FTR

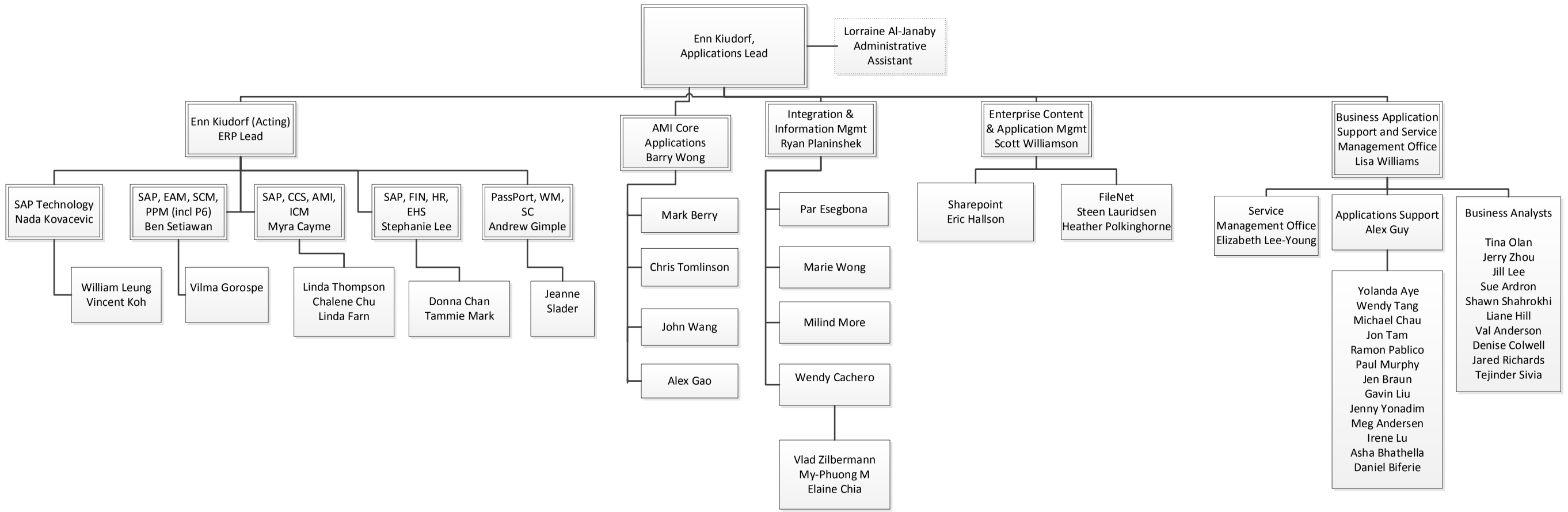
June 2, 2015

Customer & Corporate Technology Services Delivery



May 27, 2015

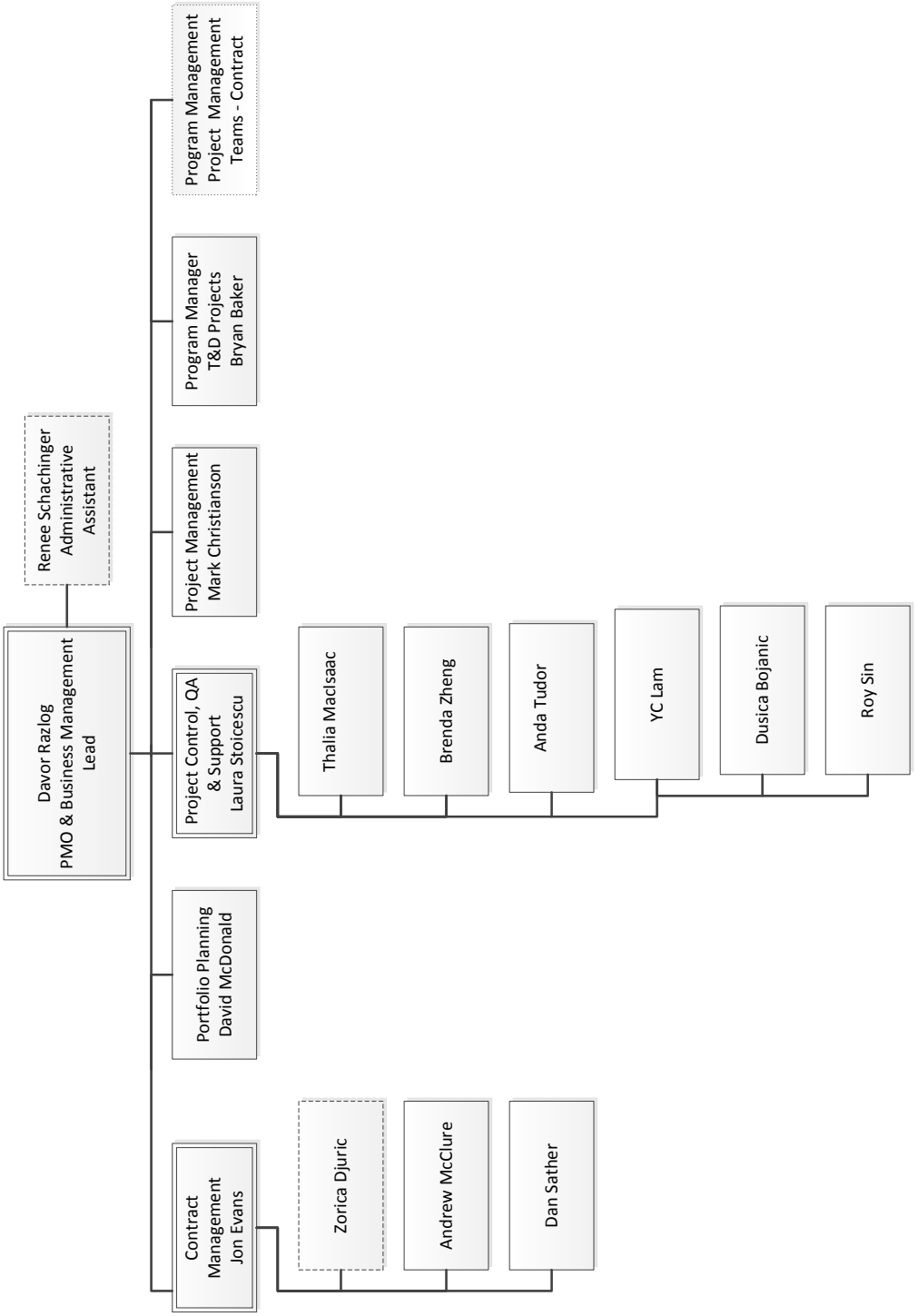
Applications



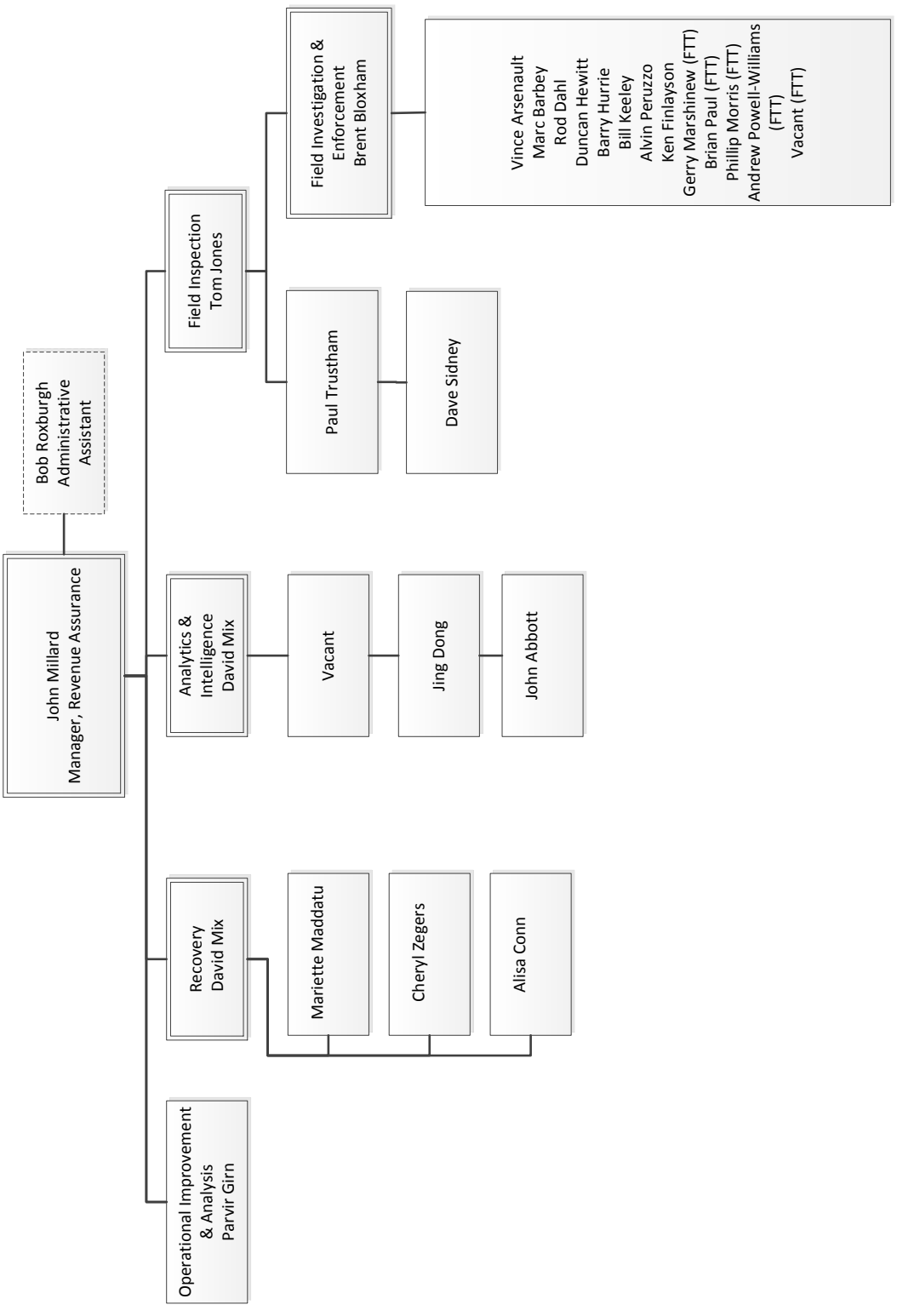
May 27, 2015

BC hydro

PMO & Business Management

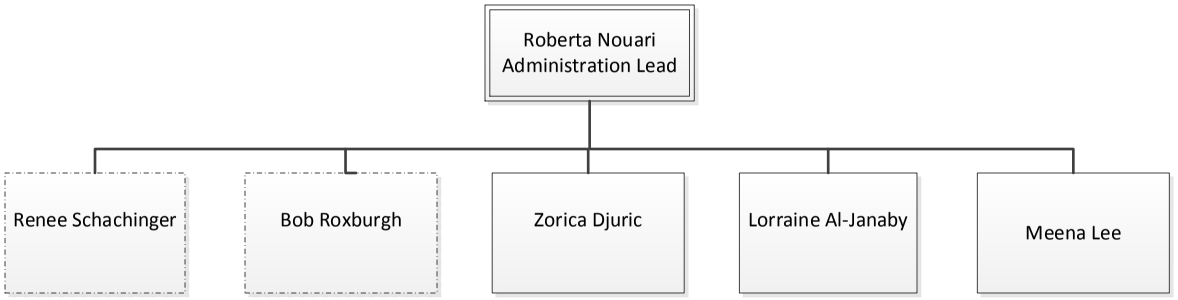


June 2, 2015


John Millard
Manager, Revenue Assurance
Bob Roxburgh
Administrative Assistant
Field Inspection
Tom Jones
Field Investigation & Enforcement
Brent Bloxham
Vince Arsenault
Marc Barbey
Rod Dahl
Duncan Hewitt
Barry Hurrie
Bill Keeley
Alvin Peruzzo
Ken Finlayson
Gerry Marshinew (FTT)
Brian Paul (FTT)
Phillip Morris (FTT)
Andrew Powell-Williams (FTT)
Vacant (FTT)
Paul Trustham
Dave Sidney
Analytics & Intelligence
David Mix
Vacant
Jing Dong
John Abbott
Recovery
David Mix
Mariette Maddatu
Cheryl Zegers
Alisa Conn
Operational Improvement & Analysis
Parvir Girn

BC hydro

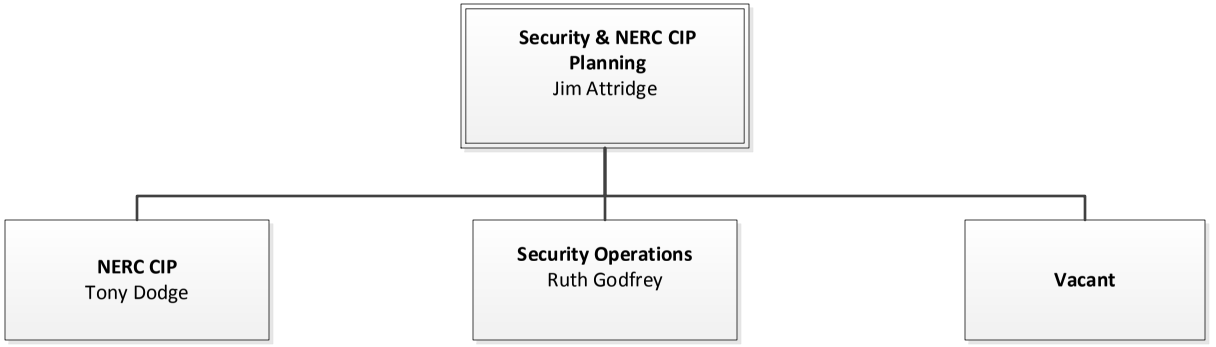
Administration



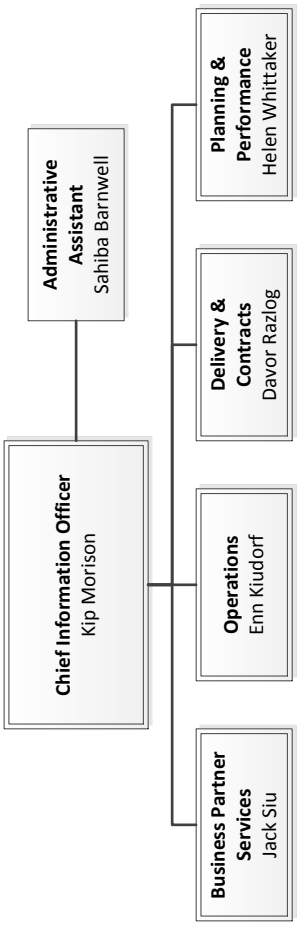
May 27,2015

BC hydro

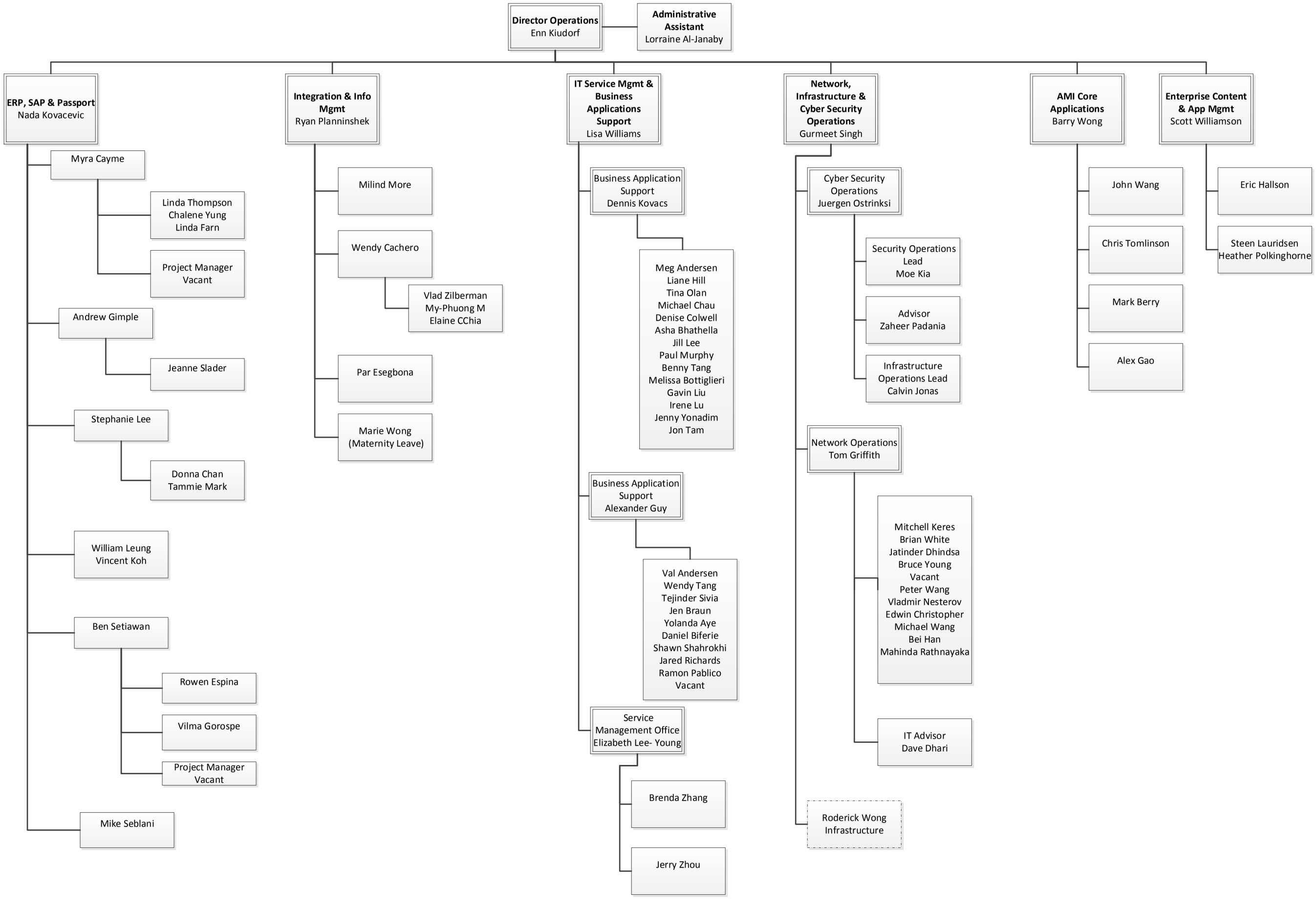
Security & NERC CIP Planning



October 14, 2014


Chief Information Officer
Kip Morison
Administrative Assistant
Sahiba Barnwell
Planning & Performance
Helen Whittaker
Delivery & Contracts
Davor Razlog
Operations
Enn Kiudorf
Business Partner Services
Jack Siu

Director, Business Partner Services
Jack Siu
Administrative Assistant
Hilda Al-Ashhab
Records & Information Mgmt Services
Rosa Munzer
Drawing Services and Asset & Engineering Records
Skye Samson
Drawing Services
Shannon Rosenwirth
Portia Ling
Jamie Cheung
Nikolina Dosen
Asset and Engineering Records Services
Michele Carpenter
Christina Mrsic
Lisa Mitchell
Pritasha Singh
*2Ryan Vennesland
*1Kelly Jones (PTR)
*Jennifer Darling (PTR)
Enterprise Records Office
Greg Kozak
BC Hydro Library & Archive Services
Pat Crawford
Shirley Ma
Vacant
CGEB *
Gerard Kho
Solution Lead
Forrest Wagner
Solution Lead
Mahtab Samedi (LOA)
Transmission, Distribution & Aboriginal Relations
Dan Boucher
Field Ops
Gary Chan
Sully Wong
E&D
Evan Schwab
Tibor Kallo
Enisa Kojic
Grid Ops
Jim Davie
OI/PI/NERC
Rob Pimer
Tibor Kallo
Enisa Kojic
Howard Takai
Gabriel Ting
AIM/PPD
Eliza Yiu
Customer
Craig Montgomery
Business Tech Advisor
Vincent Huan
Customer Portal (EVP)
Jerry Peng
Customer Care & C&EM
Grace Feng
C&EM
Christine Zhu
Customer Portal
Rob McLellan
IT Advisor
Vacant
Corporate
Tim Kikkert (acting)
Supply Chain
Shui Szeto
Business Tech Advisor
Miguel Alvaraz
Corporate
Dinno Racho
* Job Share = 1 FTR
1 LOA
*2 On rotation
*CGEB stands for
Capital Infrastructure Project Delivery
Generation
Energy Planning
Business and Economic Development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Administrative Assistant
Lorraine Al-Janaby
ERP, SAP & Passport
Nada Kovacevic
Myra Cayme
Linda Thompson
Chalene Yung
Linda Farn
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Tammie Mark
William Leung
Vincent Koh
Ben Setiawan
Rowen Espina
Vilma Gorospe
Project Manager
Vacant
Mike Seblani
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Ryan Planninshek
Milind More
Wendy Cachero
Vlad Zilberman
My-Phuong M
Elaine CChia
Par Esegbona
Marie Wong
(Maternity Leave)
IT Service Mgmt & Business Applications Support
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Meg Andersen
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Jill Lee
Paul Murphy
Benny Tang
Melissa Bottiglieri
Gavin Liu
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Jenny Yonadim
Jon Tam
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Yolanda Aye
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Advisor
Zaheer Padania
Infrastructure Operations Lead
Calvin Jonas
Network Operations
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Mitchell Keres
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Jatinder Dhindsa
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Vacant
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Vladmir Nesterov
Edwin Christopher
Michael Wang
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Roderick Wong
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AMI Core Applications
Barry Wong
John Wang
Chris Tomlinson
Mark Berry
Alex Gao
Enterprise Content & App Mgmt
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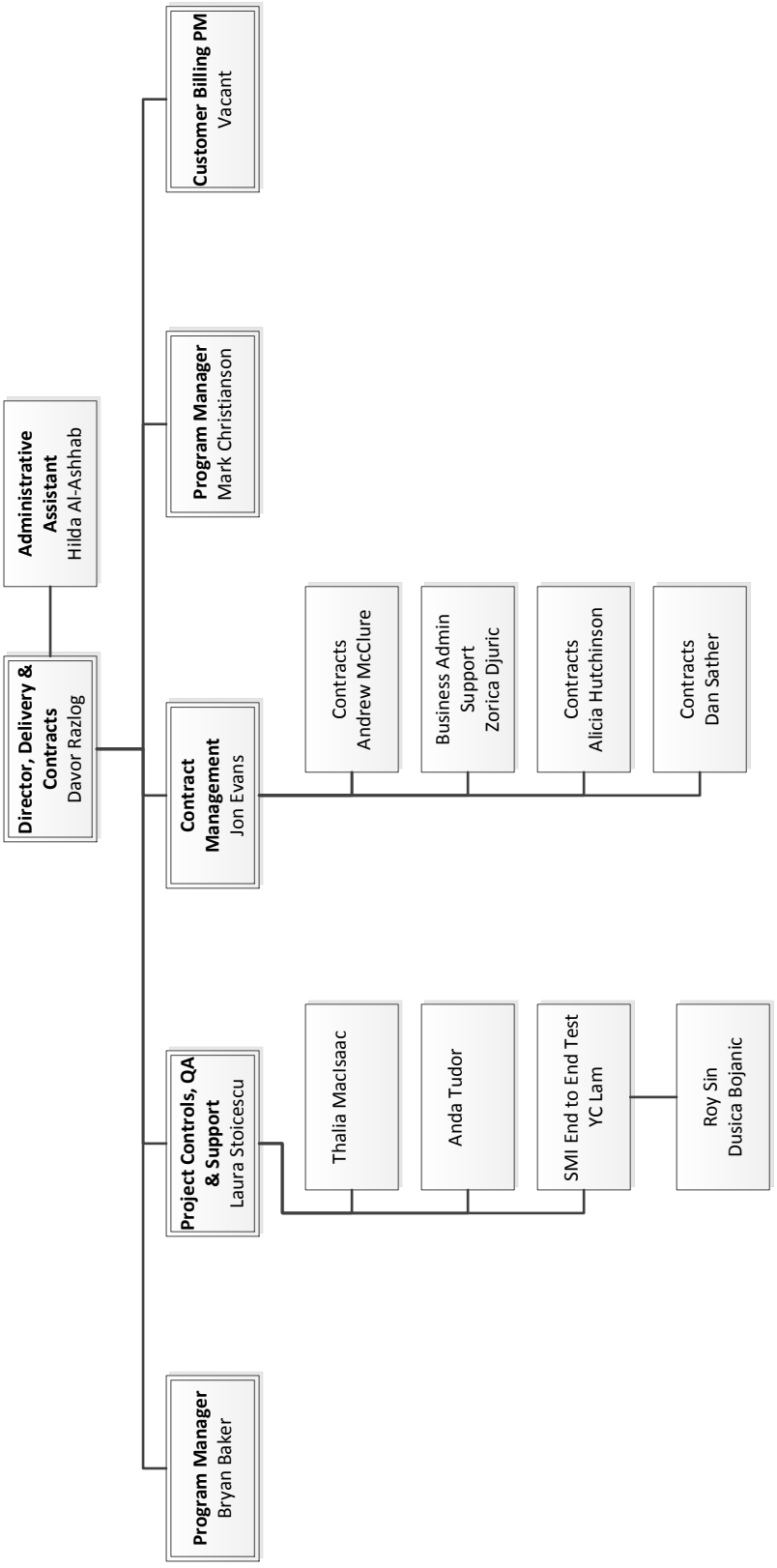
Eric Hallson
Steen Lauridsen
Heather Polkinghorne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Contracts
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Dan Sather
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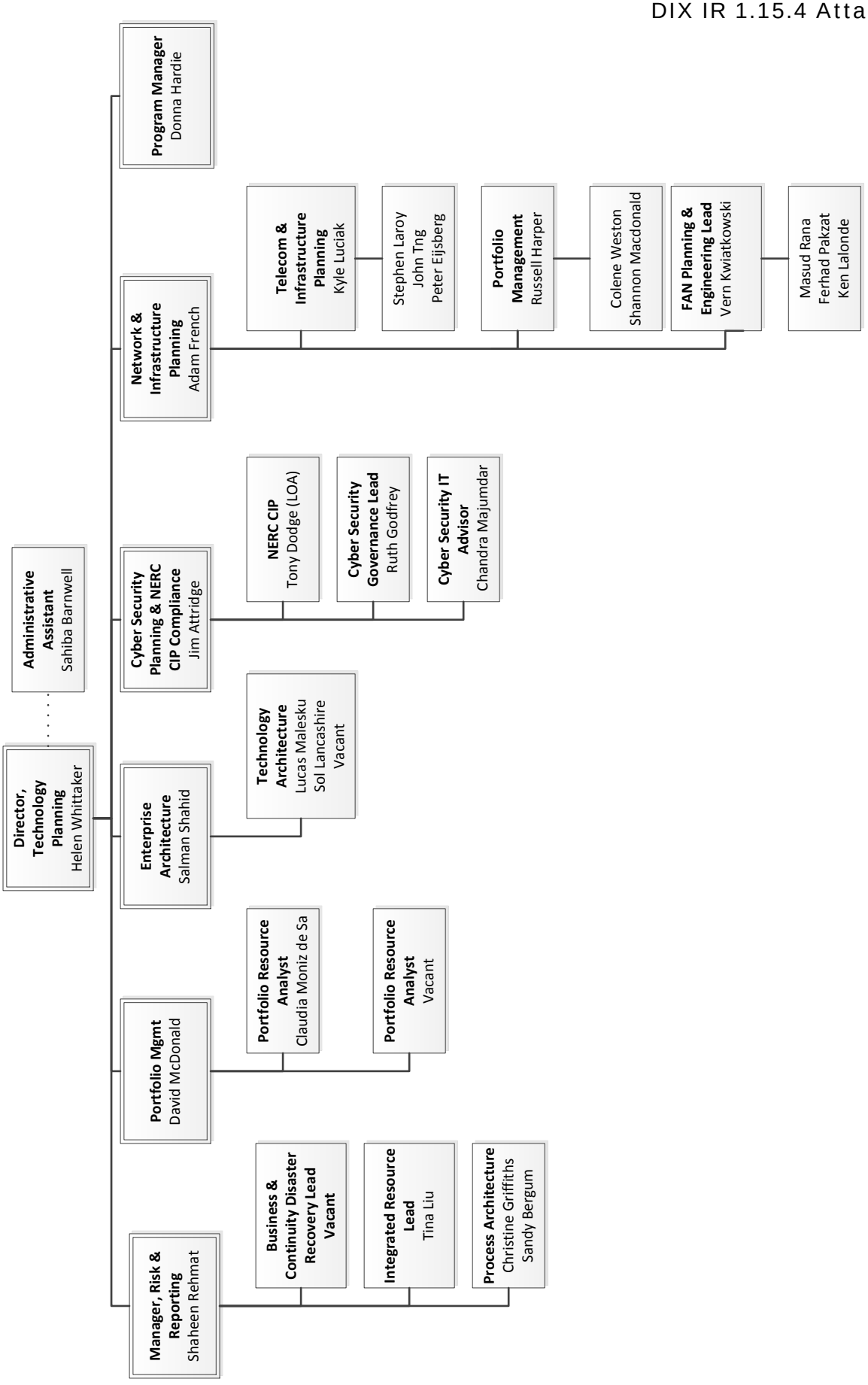
Laura Stoicescu
Thalia MacIsaac
Anda Tudor
SMI End to End Test
YC Lam
Roy Sin
Dusica Bojanic
Program Manager
Bryan Baker


Director, Technology Planning
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Masud Rana
Ferhad Pakzat
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Salman Shahid
Technology Architecture
Lucas Malesku
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Vacant
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Portfolio Resource Analyst
Claudia Moniz de Sa
Portfolio Resource Analyst
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Manager, Risk & Reporting
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Business & Continuity Disaster Recovery Lead
Vacant
Integrated Resource Lead
Tina Liu
Process Architecture
Christine Griffiths
Sandy Bergum

15.0 C. BC HYDRO APPROVAL AND OVERSIGHT CONTROLS AND PROCESSES

Reference: AUTHORIZATION AND GOVERNANCE
Exhibit B-3, Section 4.1, pp. 3-4, 30-31
Oversight of IT&T

On pages 3 and 4 of the Consolidated Information Filing, BC Hydro describes the IT&T management structure during 2007 and 2008 as "decentralized". BC Hydro states: "The Office of the Chief Information Officer (OCIO) was primarily responsible for IT&T policy, strategy, architecture and security, and enterprise-wide systems."

On pages 30-31, BC Hydro states:

An IT&T Governance committee was established in F2009 to focus on ensuring IT&T investments are prioritized, achieve business value, simplify processes, enable reliability and safety goals, and are achievable with minimal risk to the organization. The group included senior managers from the operating groups and corporate groups, and was chaired by the CIO. It was active until January 2011. A Technology Governance Committee of the Executive Team was established in March 2011 whose mandate included oversight of IT&T expenditures…

…In 2016, the Technology Governance Committee was discontinued and the full Executive Team assumed the Committee's responsibilities for oversight of IT&T.

1.15.5 In chronological form starting from 2008 and ending at the present day, please show the mechanisms and/or controls and structures that were/are in place to ensure compliance to IT&T policy, processes and standards, and highlight how they have changed over this time period. Please provide samples of enforcement controls used.

RESPONSE:

The following mechanisms, controls and structures described below were in place to ensure compliance to IT&T policy, processes and standards.

Prior to 2008	**Prior to OCIO reorganization in the fall of 2007, an IT, QA, Policy and Standards Manager role was in place. The Information Management Manual was re-developed with the following documents related to compliance: the Compliance Management Policy 6A.080 at Attachment 1 and the IMM IT QA Review Process 6B.112 at Attachment 2** **Quality Assurance reviews were done according to the IT Quality Assurance annual plan to validate compliance to IT policies and standards in IT operations and projects. An IT QA Action Tracker (Corrective and Preventive Action Request system) was used to track compliance issues towards resolution. As a result of the OCIO reorganization, this role and function was lost. The OCIO PMO continued to do IT QA Reviews of projects.**
2008	**Established the role of a Senior IT QA Specialist within the PMO to develop and maintain project delivery process and methodology standards, as well as to conduct periodic QA Reviews of IT projects.**
2009	**Formalized a monthly financial report review of IT projects spend to date and forecast to complete, and enhanced the review of IT business cases from a Financial perspective.**
March 2009	**Major update of the ITDSP when soft and hard gate reviews were introduced. OCIO IT QA Specialist was to conduct hard gate reviews, and project teams were to conduct soft gate reviews as per ITDSP.**
August 2009	**As a result of reorganization, the Senior IT QA Specialist became the sole resource within the PMO focusing on projects. Due to resource limitations, the ability to enforce compliance was limited.**
Summer 2011	**As result of further changes in the OCIO and personnel changes, no resources remained in the OCIO PMO. By this time stopped using IT QA Action Tracker system.**
Fall 2011	**Started rebuilding the OCIO PMO and added new personnel to the PMO. OCIO PMO personnel started reviewing project business case /EARs prior to approval to ensure alignment with project delivery standards. Restarted gate reviews but more on voluntary basis.**
Fall 2012	**Restarted QA reviews of IT initiatives.**
March 2013	**Major release of ITDSP increased the rigor and prominence of Gate Reviews. Gate Reviews became the main vehicle to check compliance with ITDSP. The Gate Review sessions are scheduled and chaired by the Technology PMO. Gate Review control is explained in detail in the IT Project Management Guidelines included in the Consolidated Information Filing at Attachment 18, pages 21 to 23.**

2013	**Continued with annual PMO QA plan and QA reviews of IT initiatives. Technology PMO Advisors formally trained in Quality Management System internal auditing (ISO 9000) to support project QA reviews.**
October 2014	**Technology Consolidated Capital Report introduced, enhancing the existing monthly financial report review in place since 2009, issued monthly and providing consolidated view of project actual spend and forecasts. The report identifies overspent projects.**

Financial review of EARs by Finance did not change during this period, as described in section 4.2 of the Consolidated Information Filing, pages 31 to 36. The approach by Audit Services to IT audits also did not change during this time. Internal audits were conducted per Audit Services annual plans. Please refer to section 4.4 of the Consolidated Information Filing, pages 40 to 41.

15.0 C. BC HYDRO APPROVAL AND OVERSIGHT CONTROLS AND PROCESSES

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1.15.5.1 As part of the above response, please describe in detail the changes which occurred in the oversight and governance of IT commencing in 2016 when the full Executive Team assumed the Technology Governance Committee's responsibilities for the oversight of IT&T. Please include in this response an explanation of the changes, if any, to the control mechanisms, expenditure authorizations, measures of success, and reporting requirements.

RESPONSE:

In addition to the information provided in BC Hydro's response to BCUC IR 1.15.5, there were two major changes to technology governance that are related to the Executive Team assuming the responsibilities of the Technology Governance Committee for the oversight of IT&T in 2016:

1. **For IT projects with an estimated total cost > $6 million, executive approval is required for: transition to each major phase (Identification, Definition, Implementation), changes that require an EAR revision, access to Executive Managed Reserve funds, and cancellation, deferral, or policy exemption; and**

2. **Executive approval is required for items going to the Board or Committee of the Board.**

Executive approvals are to be documented in a form that will be signed by the Chief Executive Officer and the Executive Vice-President responsible for Technology.

Please also refer to the terms of reference for IT&T governance attached to BC Hydro's response to BCUC IR 1.15.6, which include the current terms of references for the Technology Governance Committee and the Executive Team Mandate for Review & Approval of Technology Initiatives, at Attachments 21 and 22 of that response, respectively.

COMPLIANCE MANAGEMENT POLICY

Ref. #: 6A.080.06 **Revision Date:** 2010-Dec-30

Intended Readers:	All users of BC Hydro information technology assets and standards.
Contact:	OCIO, Manager, Business and Projects

PURPOSE

This document conveys the BC Hydro rules on complying with the policies, procedures and standards covered in the Information Management Manual [3].

POLICY

All users of BC Hydro information technology assets are required to comply with applicable policies, procedures and standards published in the Information Management Manual [3].

SCOPE

This policy supplements and supports Information Management Principles Compliance Policy - 6A.003 [6].

The scope of information technology assets is defined in IT Definition and Compliance Guideline – 6D.102 [4].

POLICY APPLICATION

The most relevant compliance information for general users can be obtained through the Acceptable Use Policy – 2A.020 [5] and its related policies and procedures. All users must be familiar with these documents. Sections of the IMM that are applicable to general users are listed under the IMM General User View [9].

IT users (those who work in information technology organizations or work closely with information technology organizations) must have a thorough knowledge of the Information Management Manual [3] to assure compliance with it.

Service providers must comply with applicable sections of the Information Management Manual [3] in accordance with their service agreements.

All third party users of BC Hydro facilities must comply with applicable sections of the Information Management Manual [3].

The OCIO and business group BIS Managers must ensure that unresolved noncompliance issues are addressed. The methods of addressing noncompliances include but are not limited to:

- Informing the offending user(s) or group(s) of the noncompliance
- Granting an exemption for the noncompliance, as appropriate

- Issuing IT QA Action Request(s) to request a standard change or corrective action (See IT QA Action Tracker Request Procedure – 6B.100 [7]), as appropriate
- Instituting awareness campaigns or education programs to improve user knowledge of policies, procedures and standards
- Escalating issues to senior management
- Allocating costs associated with the noncompliance to the offending business group
- Discontinuing information technology asset access privileges to the offending user(s) or group(s)

Employee disciplinary action resulting from noncompliance issues must be addressed in a way that is consistent with the Progressive Discipline Procedure [8].

ROLES AND RESPONSIBILITY

All users are responsible for being aware of and adhering to the published policies, procedures and standards that apply to them.

Business group BIS managers and the OCIO are both responsible for monitoring compliance to policies, procedures and standards.

Service providers are responsible for complying and demonstrating compliance with BC Hydro published policies, procedures and standards.

The OCIO is responsible for tracking non-compliances to closure using the IT QA Action Tracker Request Procedure – 6B.100 [7].

EXCEPTIONS

Any exceptions to this policy shall be approved in accordance with Establish and Manage Standards Process Definition – 6B.109 [1].

COMPLIANCE

Compliance to this policy will be periodically verified by the IMM IT QA Review Process – 6B.112 [2]. All unresolved policy noncompliance issues are managed according to the Policy Application section of this policy.

DEFINITIONS

BIS	–	Business Information Systems
IMM	–	Information Management Manual
IT	–	Information Technology
OCIO	–	Office of the Chief Information Officer
QA	–	Quality Assurance

REFERENCES

No.	Title and Document Number
[1]	Establish and Manage Standards Process Definition – 6B.109
[2]	IMM IT QA Review Process – 6B.112
[3]	Information Management Manual
[4]	IT Definition and Compliance Guideline – 6D.102
[5]	Acceptable Use Policy – 2A.020
[6]	Information Management Principles Compliance Policy - 6A.003
[7]	IT QA Action Tracker Request Procedure – 6B.100
[8]	Progressive Discipline Procedure
[9]	IMM General User View

RELEASE HISTORY

Doc. No. & Version	Date Released	Author	QA Action Request #	Description of Changes
6A.080.05	2010-Dec-30	Greg Rash / Mark Zschoch	269	Updated to reflect corporate reorganization. Minor sentence and formatting changes.
6A.080.04	2006-Jan-15	Greg Rash Davor Razlog Mike Dowling		Published – new IM Manual. Revised to reflect the current IMM policies and procedures. Identified that compliance is required for all documents published in the IMM. Updated with results of IMM Review on April 13th, 2005.
6A.080.03	2003-Aug-08	Ray Tang		Previous Version in IM Manual

REVIEW RECORDS

Version Reviewed	Review Date	List of Reviewers
6A.080.05 DRAFT20101124	2010-Nov-24	Mike Dowling, Sophia Tham, ABSU Staff

IMM IT QA REVIEW PROCESS

Ref. #: 6B.112.01 **Revision Date: 2006-Jan-15**

INTENDED READERS	OCIO Staff and members of the OCIO Standards Committee.
CONTACT:	OCIO, Davor Razlog 7-3905

PURPOSE

The IMM IT QA Review Process defines the process that the information management organization uses to determine whether:

- Processes function as planned, are effectively implemented and are maintained.
- Projects are executed in accordance with their charters, conform to information management policies and standards and satisfy their business objectives.

OVERVIEW

The operating principles of the IMM IT QA Review Process are that:

- Reviews are planned taking into consideration the status and importance of the processes, projects and areas to be reviewed, as well as previous reviews.
- Review criteria, scope, frequency and methods are defined prior to the review.
- The selection of reviewers and conduct of reviews ensures objectivity and impartiality of the review process.
- Reviewers do not review their own work.
- The responsibility for prioritizing, planning and conducting reviews rests with the IT QA Manager.
- The responsibility for ensuring adherence to the Information Management Manual [1] rests with the LoB BIS Managers.
- The management of the area being reviewed will ensure that actions are taken without undue delay to correct problems that arise as a result of the review.
- IT QA Action Requests (see IT QA Action Tracker Request Procedure – 6B.100 [3]) are generated as a result of review findings, are tracked until resolved and the effectiveness of the resolutions is verified.
- Project QA personnel have an independent reporting line to the project owner or sponsor.
- Reviewers are technically competent and possess the skills and knowledge necessary to perform reviews in an effective, efficient and economical manner.

SCOPE

The IMM IT QA Review Process applies to all information management projects to a degree that is appropriate for risks, customer exposure, size, conformance to standards and performance as defined in the Guidelines section of this document.

It, also, applies to all Information Management Manual [1] policies, process definitions, procedures, standards, form, tools etc. The primary focus is on effectiveness, efficiency, economy, security and internal control processes and management's ability to control its information management function activities.

This process applies to quality assurance activities conducted by the OCIO Quality Assurance function and / or other parties conducting quality assurance of information technology projects.

GUIDELINES

General

An IT Quality Assurance (QA) Plan is developed annually based on the IT Capital Plan, previous review findings, scheduled review dates, senior management requests and other factors. The IT QA Plan is periodically updated during the fiscal year to reflect changes in the capital plan and project priorities.

The IT QA Plan defines planned involvement of the OCIO Quality Assurance function in IT projects across BC Hydro. All IT projects must plan and ensure execution in compliance with the Information Management Manual [1] and that adequate quality assurance activity, such as, verification, testing and deliverable reviews is conducted. The level of OCIO involvement in project QA activities will depend on factors, such as, project risks, customer exposure, project size, planned exceptions to standards and project performance.

Based on those factors, OCIO QA involvement on projects may be:

No OCIO QA Involvement - Planning and conducting QA activities is responsibility of the project. OCIO QA group will not conduct QA reviews or monitoring of the project. OCIO retains the right to perform a detailed QA review if it deems it necessary during the execution of the project.

OCIO QA Monitoring – The OCIO QA group will review the adequacy of QA activities planned by the project and will provide necessary advice. High level review of key project deliverables, compliance to organizational process and project issues at key project milestones. A Summary QA Report will be created at the end of the project.

OCIO QA Detailed Review – The OCIO QA group will participate in planning and execution of project QA activities. Project planning documents, test strategy, test results, and other related deliverables will be reviewed. OCIO QA will assess project compliance with IMM and other organizational policies and standards. Project readiness at key project milestones and Go / No-go decision points will be assessed. Depending on the size of the project and duration, the OCIO QA representative may participate in regular team meetings. Detailed QA reviews usually occur in Project Development and Project Implementation phases. Detailed QA Report will be created at major milestones or the end of the project.

OCIO Ad-hoc QA Review - Ad-hoc QA reviews will be initiated when concerns are identified with a project or process and the OCIO would like to review the project closely and verify if concerns are justified, what are the root causes and what corrective actions should to be taken. Ad-hoc QA reviews can be done at any project phase. The level of detail and depth of the review will be defined in each particular case. A Summary QA or Detailed QA Report will be produced at the end of review. Ad-hoc reviews are not previously planned and are not included in IT QA Plan.

OCIO QA Process Review – Some OCIO QA activity will be directed toward reviews of processes or groups of processes that are not project specific. This is to ensure that all Information Management Manual [1] components are reviewed to determine their effectiveness, efficiency and the organization's compliance to them.

The IT QA Plan will use a combination of project and process reviews to ensure adequate review coverage each year.

Project Reviews

Project reviews are governed by the Project QA Review Plan and may encompass a number of project quality assurance components.

1. Project IT QA Review Plan

The Project IT QA Review Plan (Terms of Reference) is prepared, reviewed and endorsed early in the project - preferably during the project initiation stage. Review take place throughout the project as defined in the plan.

2. Project Quality Assurance Components

Depending upon the nature of the project, and other guiding/steering bodies present elsewhere in the project, quality assurance may include the following components:

Project Governance

This means assuring that the project is governed properly. It includes:

- Ensuring the project has adequate executive support and participation
- Assessing the likelihood of attaining business objectives for the project
- Managing project objective(s) and scope changes
- Ensuring key decisions being made in a timely manner

Project Management

This means ensuring that the project is managed properly via:

- Clear definitions of objectives and scope
- Defined methodology, processes and deliverables
- Project structure and reporting
- Project leadership and empowerment
- Resource planning, allocation and tracking
- Funding for the project itself and the related initiatives
- Assessment of project risks
- Risk reduction programs
- Communications, education and change management
- Schedule management
- Business readiness

IT Technical Quality

This means ensuring that there is an adequate level of technical quality built into project deliverables by ensuring proper:

- Compliance with the OCIO Goal Technology Architecture
- Compliance with the standard project management processes

- Quality of software objects (programs, data, scripts, procedures, database, etc) and performance
- Infrastructure design, readiness and performance
- Managing project objective(s) and scope changes
- Key decisions being made in a timely manner
- Compliance with OCIO policies and standards as documented in the Information Management Manual [1].

Management Controls

This means ensuring that there is an adequate level of management control designed into the system and associated business processes:

- Review Risk and Control Analysis produced by the project team
- Any suggestions and recommendations from recent reviews are incorporated into the project

Project Financial

This means that the project budgets are managed adequately to ensure that

- Project expenditures are properly tracked and reported.
- Regular status reports track planned versus actual costs and forecasts to the end of the project.
- All project costs are reported, including OMA expenditures.

Change Management

This means that the implementation tasks are performed adequately, and include such tasks as assessing the adequacy of the:

- Training and Knowledge Transfer
- Sustainment Readiness
- User Acceptance
- Transition Planning

Reporting Alternatives and Formats

Depending upon the needs of the project, the following reporting frequency and formats are recommended. The details of reporting are documented in the Project IT QA Review Plan.

1. **Upon Completion of the Review of a Process or Project**
   - Publish and distribute the IT QA Review Report (Summary or Detailed).
   - Issue IT QA Action Requests to address findings and opportunities to improve.
2. **At Key Milestones**
   - The QA reviewer(s) report to Steering Committee or Project Sponsor/Owner.
   - Format: Summary IT QA Review Report with findings and opportunities or presentation.
3. **Weekly:**
   - For major IT projects, the IT QA reviewer(s) may report to the project manager or project management team weekly and discuss findings and opinions on current work.
   - Format: Informal discussion
4. **Monthly:**

- For major IT projects the IT QA reviewer(s) may decide to summarize findings on a monthly basis and communicate this information formally to the project owner/sponsor and project manager.
- Format: Interim IT QA Review Report (Summary or Detailed) or presentation.

Qualifications of QA Reviewer(s)

The following are the desired qualifications for a QA reviewer candidate:

1. Several years of hands-on experience in project implementation, project management and quality assurance.
2. Familiarity with the applicable IMM policies, procedures, guidelines and standards.
3. Independence from the project team: s/he should not be a working part of the project team and must maintain an arm's length distance and have a reporting line to the project sponsor or owner.
4. Knowledge of the business processes being reviewed is an asset.
5. The QA reviewer(s) may not necessarily have in-depth expertise in all areas of the particular implementation. In such cases, he/ she may engage subject matter experts as appropriate.
6. The QA reviewer(s) do not necessarily need to be full-time.

Quality Assurance Strategies and Principles:

The following strategies and principles are recommended. The details are documented in the IT QA Review Plan.

1. Use of a Vendor QA Partner

Service providers shall plan their own QA activates and engage their QA personnel to demonstrate quality delivery of projects and services. Such activates are independent OCIO IT QA activities, but synergies could be achieved.

For major projects, the service provider for system integration or installation service may offer a QA partner or manager. This service serves both the vendor and the customer. However, the system owner must not rely solely on this person's QA reports and recommendations.

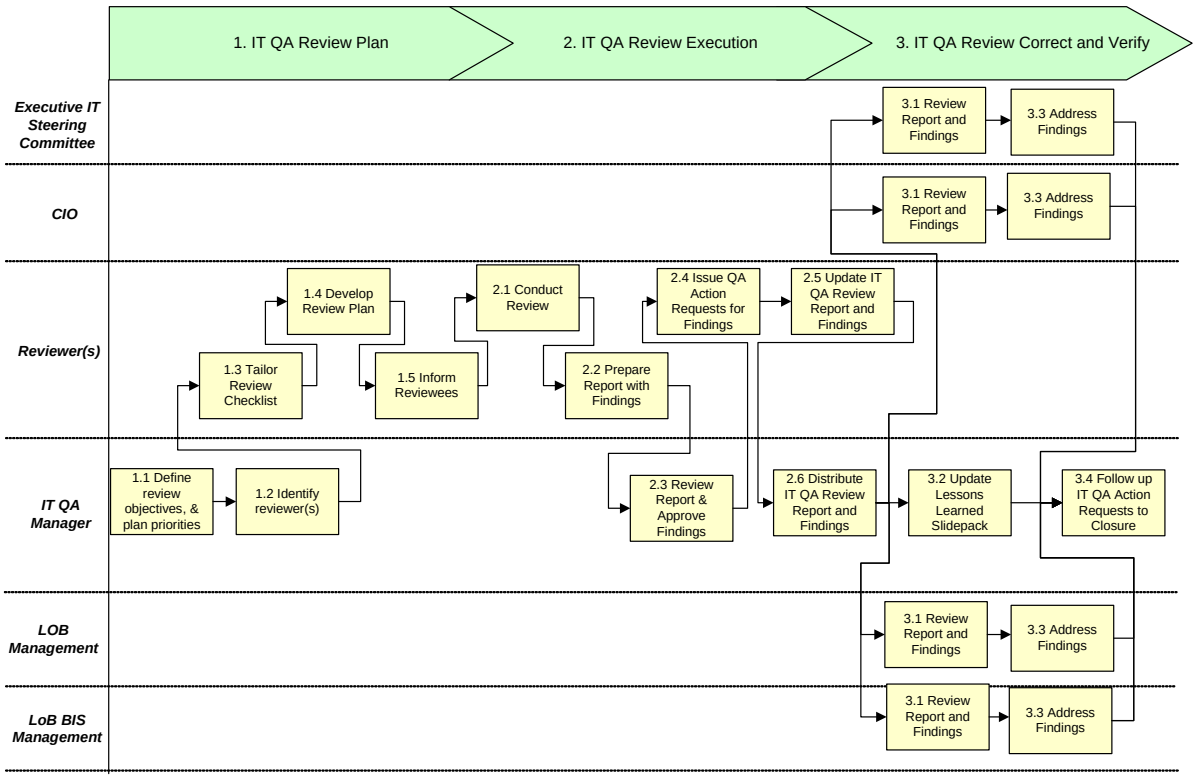
2. On-going Participation of the QA Team

The project owner and manager should regard the QA reviewer(s) as a sounding board. The QA reviewer(s) require access to all work products at all stages of completion and throughout the project.

3. Independent QA Auditors

The project or process owner may retain the services of an independent QA auditor to conduct review activities.

IMM IT QA REVIEW PROCESS – PROCESS MAP



IMM IT QA REVIEW PROCESS DETAILED PROCESS DESCRIPTION

Sub-Process	**1. IT QA Review Plan**	
Objectives	To prepare a plan for IT QA Reviews	
Deliverables	IT QA Review Plan(s)	
Inputs	**Activities**	**Outputs**
• IT Capital Plan. • Prior IT QA Review findings. • IT QA Action Requests. • CIO, Project Sponsor, Project Manager or Initiative Steering Committee requests	1.1 Define review objectives and plan priorities • The IT QA Manager develops the IT QA review plan annually and revises, as needed throughout the year. • The IT QA Manager chooses projects across all LoBs and selects some processes to review. Additional process review coverage is achieved through the project reviews.	• Annual IT QA Plan
• OCIO, BC Hydro and service provider resource(s)	1.2 Identify reviewer(s) • The IT QA Manager identifies qualified resource(s) for each of the review activities planned for the year. See Guidelines for guidance. • The review may be conducted by an individual or a team.	• Qualified reviewer(s) identified
• IT Quality Assurance Checklists – 6F.022 [2]	1.3 Tailor QA review checklist • The reviewer(s) modify the generic checklist to reflect the requirements of the process or project under review. • For process reviews, the reviewer should prepare a generic checklist for the process under review using the applicable standards for the process.	• Tailored checklist
• Relevant project or process documents • For example, the business case, OCIO minimum deliverables list, project charter, standards. Process documents and procedures	1.4 Develop review plan • Use the available project or process information to develop a plan for the review. The plan should identify the scope of the review, the source materials that will be used, the people who will be interviewed, the inspections that will be done, the schedule for the review and the records that will be inspected.	• IT QA Review Plan

Inputs	Activities	Outputs
• IT QA Review Plan	1.5 Inform review participants • Distribute the review plan to the review participants and request appointments for interviews, as needed.	• Participants fully aware of the Review Plan and prepared to participate, as needed

Sub-Process	**2. IT QA Review Execution**	
Objectives	To conduct the IT QA Review in accordance with the IT QA Review Plan	
Deliverables	IT QA Review Report with Findings	
Inputs	**Activities**	**Outputs**
• IT QA Review Plan • Tailored Checklist • Information Management Manual [1] • Project Charters	2.1 Conduct Review • The reviewer(s) with the support of the participants conducts the review.	• Completed checklists and notes
• Completed checklists and notes	2.2 Prepare report with findings • The reviewer prepares a report on the results of the review. The objective of report is to identify the strengths and weaknesses of the process or project. Nonconformances to standards, policies, processes and procedures are identified as findings. Opportunities to improve efficiency and effectiveness are also identified.	• Draft IT QA Review Report
• Draft IT QA Review Report	2.3 Review report and approve findings • The IT QA Manager reviews the report and approves the findings.	• Draft IT QA Review Report with IT QA Manager updates
• Draft IT QA Review Report with IT QA Manager updates	2.4 Issue IT QA Action Requests for Findings • The reviewer(s) issue IT QA Action Requests for the review report findings.	• IT QA Action Request(s)
• Draft IT QA Review Report with IT QA Manager updates • IT QA Action Request(s)	2.5 Update IT QA Review Report and Findings • The reviewer(s) update the report and reference the IT QA Action Requests in it.	• Final IT QA Review Report with IT QA Action Requests identified

Inputs	Activities	Outputs
• Final IT QA Review Report with IT QA Action Requests identified	2.6 Distribute the IT QA Review Report and Findings • The IT QA Manager distributes the final report to the CIO, LoB Management and project team, as appropriate.	• Email with link to report summarizing key findings and IT QA Action Requests

Sub-Process	**3. IT QA Review Correct and Verify**	
Objectives	To review findings corrected and verified	
Deliverables	Closed IT QA Action Requests	
Inputs	**Activities**	**Outputs**
• Final IT QA Review Report • IT QA Action Requests	3.1 Review Report and Findings • Report recipients review the report and take appropriate action to improve performance in the future.	• Findings and IT QA Action Requests acknowledged by assignee(s)
• Final IT QA Review Report • IT QA Action Requests	3.2 Update Lessons Learned Slidepack • The IT QA Manager updates the "Lessons Learned" slidepack and posts them on the OCIO website.	• Updated "Lessons Learned" slidepack
• Findings and IT QA Action Requests acknowledged by assignee(s)	3.3 Address Findings • The assignee(s) address the IT QA Action Requests	• IT QA Action Requests ready for verification
• IT QA Action Requests ready for verification	3.4 Follow up IT QA Action Requests to closure • The IT QA Manager monitors progress on the IT QA Action Requests, verifies resolution and closes the IT QA Action Requests. • Managers responsible for resolution of the review findings are expected to take action without undue delay.	• Effective measures taken to resolve IT QA Action Requests • IT QA Action Requests closed

ROLES AND RESPONSIBILITY

The primary stakeholders in this process are executive management, the CIO, IT QA management, line of business management and line of business information systems management. A complete description of the information management cross-functional organization structure is contained in Information Management Organizations and Committees - 6E.010 [6].

IMM IT QA Review Process RACI Diagram

No.	Sub-Processes	Exec IT SC	CIO	Reviewer(s)	IT QA Manager	LoB Mgmt.	LoB BIS Manager
1	IT QA Review Plan		A		R	C	C
2	IT QA Review Execution		I	R	A	C	C
3	IT QA Review Correct and Verify	I	A	R	R	R	R

R	Responsible	A	Accountable	C	Consulted / Participated	I	Informed
Individuals who perform a task (doer responsible for execution / action). The degree of responsibility is defined by the accountable person. Responsibilities can be shared.		The individual who is ultimately accountable for a decision or action; includes yes/no and power of veto. Only one accountable person is assigned to a task.		Individuals to be consulted prior to a final decision or action being taken. Two way communication.		Individuals to be informed after a decision or action is taken.	

ASSUMPTIONS

None.

TAILORING GUIDELINES

The IT QA Manager may modify the standard process to suit specific needs. For example, the requirements for checklists, plans and formal reports may be modified, if justified by the situation. Findings and opportunities must always be logged in the IT QA Action Tracker (see IT QA Action Tracker Request Procedure – 6B.100 [3]).

Checklists may be tailored for each situation. Reviewer(s) may add to or reduce the scope of a review, as appropriate for the situation.

EXCEPTIONS

Any exceptions to this process shall be approved in accordance with Establish and Manage Standards Process Definition – 6B.109 [4].

COMPLIANCE

Compliance to this process definition will be periodically verified by the IT QA Review Process – 6B.112 [7]. All unresolved process definition noncompliance issues are managed according to the Compliance Management Policy – 6A.080 [5].

Compliance will be verified to the activity level described in the process map.

DEFINITIONS

BIS	–	Business Information Systems
CIO	–	Chief Information Officer.
Exec IT SC	–	Executive IT Steering Committee.
IMM	–	Information Management Manual
IT	–	Information Technology
LoB	–	Line of Business
OCIO	–	Office of the Chief Information Officer
OCIO SC	–	OCIO Standards Committee.
quality assurance	–	Focuses on providing confidence that quality requirements will be fulfilled. Quality assurance activities include reviews, inspections, testing and verification.

REFERENCES

No.	Title and Document Number
[1]	Information Management Manual
[2]	IT Quality Assurance Checklists – 6F.022
[3]	IT QA Action Tracker Request Procedure – 6B.100
[4]	Establish and Manage Standards Process Definition – 6B.109
[5]	Compliance Management Policy – 6A.080
[6]	Information Management Organizations and Committees - 6E.010
[7]	IT QA Review Process – 6B.112

NEXT SCHEDULED REVIEW

The next scheduled review of this process shall occur in February 2007.

RELEASE HISTORY

Version	Date Released	Author	QA Action Request #	Description of Changes
6B.112.01	2006-Jan-15	Greg Rash Mike Dowling		Published – new IM Manual. Revised to reflect the current IMM policies and procedures, as part of the IM Manual re-alignment. Updated with results of IMM Review on February 23rd, 2005.

REVIEW RECORDS

Version Reviewed	Review Date	List of Reviewers
6B.112.01 DRAFT20050202	2005-Feb-23	Jeff Hanna, Valerie Andersen No comments Received: Peter Broomfield, Jeff Gingera, Barry White, David Greaves, Greg Madsen (per prior agreement), Daryl Geishiemer
6B.112.01 DRAFT20041130	2004-Dec-15	Davor Razlog

15.0 C. BC HYDRO APPROVAL AND OVERSIGHT CONTROLS AND PROCESSES

Reference: AUTHORIZATION AND GOVERNANCE
Exhibit B-3, Section 4.1, pp. 3-4, 30-31
Oversight of IT&T

BC Hydro further states on page 30:

Oversight of IT&T was provided by the Audit and Risk Management Committee (renamed the Audit and Finance Committee effective September 2011) until April 27, 2015, after which oversight was transferred to the Customer Service, Operations & Planning Committee (CSOPC)…

1.15.6 Please differentiate between the functions and responsibilities of the (i) the Audit and Risk Management Committee (renamed the Audit and Finance Committee); (ii) the CSOPC; (iii) the IT&T Governance Committee; and (iv) Executive Team with respect to the oversight and governance of IT&T. As part of this response, please provide the following information:

- The composition of each oversight group, including the internal and external stakeholders which comprised each oversight group;
- The selection criteria and process used to select members to each oversight group;
- The expertise and mandates contained within each oversight group, including the Terms of Reference for each oversight group; and
- The accountabilities and responsibilities assigned to each oversight group.

RESPONSE:

For the period between fiscal 2008 and fiscal 2014, the composition of the Executive Team and each Board committee having functions and responsibilities with respect to the governance and oversight of IT&T is included in the table below. The composition of these groups for fiscal 2015 and fiscal 2016 follows in a separate table below.

The Terms of Reference for each such Board committee, including a statement of its accountabilities and responsibilities, are attached as referenced in the table. Directors are appointed to the Board by Order-in-Council, and appointments to

specific Committees are made by the Board on the recommendation of the Board Chair.

Executive Team members are appointed by the Chief Executive Officer in consultation with the Chair of the Governance and Human Resources Committee (or its predecessor committee) of the Board. As the Executive Team does not have a formal mandate or decision-making authority apart from the authority assigned to its individual members, there are no Terms of Reference for the Executive Team to provide.

Year	Composition	Board Committee Terms of Reference
F2009	**Attachment 1**	**Attachment 7 [until May 22, 2008]** **Attachment 8 [from May 22, 2008]**
F2010	**Attachment 2**	**Attachment 8 [until August 5, 2009]** **Attachment 9 [from August 6, 2009]**
F2011	**Attachment 3**	**Attachment 9 [until September 15, 2010]** **Attachment 10 [from September 16, 2010]**
F2012	**Attachment 4**	**Attachment 10 [until September 2011]** **Attachment 11 [from September 2011]**
F2013	**Attachment 5**	**Attachment 11**
F2014	**Attachment 6**	**Attachment 11 [until December 5, 2013]** **Attachment 12 [from December 5, 2013]**

For fiscal 2015 and fiscal 2016, the composition of the Executive Team and each Board committee having functions and responsibilities with respect to the governance and oversight of IT&T is included in the table below.

Year	Executive Team Composition	Board Committee Composition	Board Committee Terms of Reference
F2015	• **Charles Reid, President & CEO (until July 13, 2014)** • **Jessica McDonald, President & CEO (from July 14, 2014)** • **Ray Aldeguer, SVP, Corporate Services & General Counsel (until February 18, 2015)** • **Debbie Nagle, SVP & CHRO (until February 18, 2015)** • **Teresa Conway, President & CEO, Powerex** • **Greg Reimer, EVP, Transmission & Distribution (until February 2015); EVP, Transmission, Distribution & Customer Service (from February 2015)** • **Chris O'Riley, EVP, Generation (until February 18, 2015); Deputy CEO & Capital Infrastructure Project Delivery (from February 18, 2015)** • **Cheryl Yaremko, EVP, Finance & CFO** • **Susan Yurkovich, EVP, Site C**	**Audit & Finance Committee:** • **T. McVicar (Chair) (until October 2014)** • **B. Adsit (from May 29, 2014)** • **L. Blain (until October 2014)** • **J. Brown (Appointed Chair, October 2014)** • **T. Redies (from October 2014)** • **S. Bellringer (ex-officio)**	**Attachment 12 (until May 28, 2014)** **Attachment 13 (May 29, 2014 to November 18, 2014)** **Attachment 14 (from November 19, 2014)**

Year	Executive Team Composition	Board Committee Composition	Board Committee Terms of Reference
F2016	• **Jessica McDonald, President & CEO** • **Ray Aldeguer, SVP, Corporate Services & General Counsel (April 15, 2015 until December 1, 2015); General Counsel (from December 1, 2015)** • **Debbie Nagle, SVP & CHRO (April 15, 2015 – November 30, 2015)** • **Teresa Conway, President & CEO, Powerex** • **Greg Reimer, EVP, Transmission, Distribution & Customer Service** • **Chris O'Riley, EVP, Generation (until February 18, 2015); Deputy CEO & Capital Infrastructure Project Delivery (from February 18, 2015)** • **Cheryl Yaremko, EVP, Finance & CFO (until April 15, 2015); EVP Finance & Supply Chain and CFO (from April 15, 2015)** • **Susan Yurkovich, EVP, Site C (until April 29, 2015)** • **Mark Poweska, SVP, Generation (April 9, 2015 to December 1, 2015); SVP Training, Development & Generation (from December 1, 2015)** • **Janet Fraser, SVP, Energy, Regulatory & Business Planning (April 9, 2015 to December 1, 2015); CHRO & SVP Corporate Affairs (from December 1, 2015)** • **Hugo Shaw, SVP, Safety, Security & Emergency Management (from September 9, 2015)**	**Audit & Finance Committee (until April 26, 2015)** • **T. McVicar (Chair) (until October 2014)** • **B. Adsit (from May 29, 2014)** • **L. Blain (until October 2014)** • **J. Brown (Appointed Chair, October 2014)** • **T. Redies (from October 2014)** • **S. Bellringer (ex-officio)** **Customer Service, Operations & Planning Committee (CSOPC) (from April 27, 2015):** • **J. Hatton (Chair)** • **B. Bennett (ex-officio as of February 24, 2016)** • **J. Brown** • **J. Knappett** • **J. North** • **T. Redies** • **J. Ritchie** • **S. Bellringer (ex-officio) (until September 30, 2015)**	**Attachment 14 (AFC, until April 26, 2015)** **Attachment 15 (CSOPC, April 27, 2015 to November 17, 2015)** **Attachment 16 (CSOPC, from November 18, 2015)**

With respect to the IT&T Governance Committee, there were a number of changes in committee name, composition, and mandate between 2008 and 2016. The table below documents these changes and refers to the attachments to this response that correspond.

Year	Management Committee Name	Committee Composition	Committee Mandate or Terms of Reference
2008	**IT&T Governance**	• **Don Stuckert (Chair) – Interim Chief Information Officer (January to July) Vice-President and Chief Information Officer (from July 2008)** • **David Lebeter – Director, Generation Operations** • **Donna Leclair – Acting Director, Smart Metering & Infrastructure** • **Trish Pekeles – Chief Strategy Officer & Acting CFO (Acting CFO April to August 2008)** • **Brian Tabe – Director, Finance** • **Ray Aldeguer – Sr. Vice President, Corporate Resources & General Counsel** • **Roy Grout – Vice President, Engineering** • **Debbie Nagle – Director, Strategic HR & Training** • **Donia Snow – General Manager, Distribution Operations** • **Ray Stewart – Chief Safety, Health and Environment Officer** • **Bridgette Zacharias – Director, Customer Care**	**Attachment 17**

Year	Management Committee Name	Committee Composition	Committee Mandate or Terms of Reference
2009	**IT&T Governance**	• **Don Stuckert (Chair) – Vice President and Chief Information Officer** • **David Lebeter – Director, Generation Operations** • **Donia Snow – Sr. General Manager, Distribution Operations** • **Keith Anderson – Director, SMI Negotiations** • **Michael Newland – Manager, Digital Communications** • **Debbie Nagle – Chief Human Resources Officer** • **Jim Nicholson** • **Ray Aldeguer – Sr. Vice President, Corporate Resources & General Counsel** • **Ken MacDonald – Sr. Strategic Business Advisor** • **Ray Stewart – Chief Safety, Health and Environment Officer** • **Pat Sawatsky – Sr. General Manager, Construction and Transmission Services** • **Roy Grout – Vice President, Engineering** • **Trish Pekeles – Executive Director, Strategy & Business Transformation Partnerships & Procurement** • **Cheryl Yaremko – Chief Accounting Officer** • **Donna LeClair – Chief Technology Officer**	**No update**

Year	Management Committee Name	Committee Composition	Committee Mandate or Terms of Reference
2010	**IT&T Governance**	• **Don Stuckert (Chair) – Vice President and Chief Information Officer** • **David Lebeter – Vice President, T&D Field Operations & Safety** • **Donia Snow – Sr. General Manager, Distribution Operations** • **Jim Nicholson – Director, Customer Care** • **Michael Newland – Manager, Digital Communications** • **Trish Pekeles – Executive Director, Procurement, Partnerships & Enterprise Strategy** • **Cheryl Yaremko – Chief Accounting Officer** • **Ray Stewart – Chief Safety, Health and Environment Officer** • **Debbie Nagle – Chief Human Resources Officer** • **Donna Leclair – Chief Technology Officer** • **Keith Anderson – Manager, Customer Service**	**No Update**
2011	**Technology Governance Committee**	• **Charles Reid (Chair) – Executive Vice President Finance & Chief Financial Officer** • **Greg Reimer – Executive Vice President, Transmission & Distribution** • **Don Stuckert – Vice President & Chief Information Officer** • **Kip Morison – Chief Technology Officer** • **Bev Van Ruyven – Deputy CEO & Executive Vice President, Customer & Corporate** • **Debbie Nagle – Chief Human Resources Officer** • **Julius Pataky – Vice President, T&D Asset Investment Management**	**No update**

Year	Management Committee Name	Committee Composition	Committee Mandate or Terms of Reference
2011	**Technology & Security Governance (as of September 2011)**	• **Don Stuckert (Chair) – Vice President & Chief Information Officer** • **Renee Smith-Valade – Sr. Vice President, Communications** • **Debbie Nagle – Sr. Vice President & Chief Human Resources Officer** • **Teresa Conway – President & CEO, Powerex Corp.** • **Greg Reimer – Executive Vice President, Transmission & Distribution** • **Chris O'Riley – Executive Vice President, Generation** • **Susan Yurkovich – Executive Vice President, Site C** • **Charles Reid – Executive Vice President, Finance & Corporate Resources**	**Attachment 18**
2012	**Technology & Security Governance**	• **Don Stuckert (Chair) – Vice President & Chief Information Officer** • **Renee Smith-Valade – Sr. Vice President, Communications** • **Debbie Nagle – Sr. Vice President & Chief Human Resources Officer** • **Teresa Conway – President & CEO, Powerex Corp.** • **Greg Reimer – Executive Vice President, Transmission & Distribution** • **Chris O'Riley – Executive Vice President, Generation** • **Susan Yurkovich – Executive Vice President, Site C** • **Charles Reid – President & CEO (acting)**	**No Update**

Year	Management Committee Name	Committee Composition	Committee Mandate or Terms of Reference
2012	**Technology & Security Governance**	**As of April 2012:** • **Don Stuckert (Chair) – President & CEO, Powertech and Vice President, Technology & Security** • **Renee Smith-Valade – Sr. Vice President, Communications** • **Debbie Nagle – Sr. Vice President & Chief Human Resources Officer** • **Teresa Conway – President & CEO, Powerex Corp.** • **Greg Reimer – Executive Vice President, Transmission & Distribution** • **Chris O'Riley – Executive Vice President, Generation** • **Susan Yurkovich – Executive Vice President, Site C** • **Charles Reid – President & CEO Cheryl Yaremko – Chief Financial Officer (acting)**	**No Update**
2012	**Technology & Security Governance**	**As of May 2012:** • **Don Stuckert (Chair) – President & CEO, Powertech and Vice President, Technology & Security** • **Debbie Nagle – Sr. Vice President & Chief Human Resources Officer** • **Greg Reimer – Executive Vice President, Transmission & Distribution** • **Chris O'Riley – Executive Vice President, Generation** • **Cheryl Yaremko – Chief Financial Officer (acting)**	**Attachment 19**

Year	Management Committee Name	Committee Composition	Committee Mandate or Terms of Reference
2012	**Technology Governance (As of June 2012)**	• **Chris O'Riley (Chair) – Executive Vice President, Generation** • **Cheryl Yaremko – Executive Vice President, Finance and Chief Financial Officer** • **Debbie Nagle – Sr. Vice President & Chief Human Resources Officer** • **Greg Reimer – Executive Vice President, Transmission & Distribution** • **Don Stuckert – President & CEO, Powertech and Vice President, Technology & Security**	**No Update**
2013	**Technology Governance**	• **Chris O'Riley (Chair) – Executive Vice President, Generation** • **Cheryl Yaremko – Executive Vice President, Finance and Chief Financial Officer** • **Debbie Nagle – Sr. Vice President & Chief Human Resources Officer** • **Greg Reimer – Executive Vice President, Transmission & Distribution** • **Don Stuckert – President & CEO, Powertech and Vice President, Technology & Security**	**No Update**
2014	**Technology Governance**	• **Chris O'Riley (Chair) – Executive Vice President, Generation** • **Cheryl Yaremko – Executive Vice President, Finance and Chief Financial Officer** • **Debbie Nagle – Sr. Vice President & Chief Human Resources Officer** • **Greg Reimer – Executive Vice President, Transmission & Distribution** • **Don Stuckert – President & CEO, Powertech and Vice President, Technology & Security** • **Joanna Sofield – General Manager, Power smart**	**No Update**

Year	Management Committee Name	Committee Composition	Committee Mandate or Terms of Reference
2015	**Technology Governance**	• **Chris O'Riley (Chair) – Executive Vice President, Generation** • **Cheryl Yaremko – Executive Vice President, Finance and Chief Financial Officer** • **Debbie Nagle – Sr. Vice President & Chief Human Resources Officer** • **Greg Reimer – Executive Vice President, Transmission & Distribution** • **Don Stuckert – President & CEO, Powertech and Vice President, Technology & Security**	**No Update**
2015	**Technology Governance**	**As of February 2015:** • **Greg Reimer (Chair) – Executive Vice President, Transmission & Distribution** • **Chris O'Riley – Executive Vice President, Generation** • **Debbie Nagle – Sr. Vice President & Chief Human Resources Officer** • **Cheryl Yaremko – Executive Vice President, Finance and Chief Financial Officer** • **Keith Anderson – Vice President, Customer Service** • **Kip Morison – Chief Information Officer (acting)**	**No Update**

Year	Management Committee Name	Committee Composition	Committee Mandate or Terms of Reference
2015	**Technology Governance**	**As of March 2015** • **Greg Reimer (Chair) – Executive Vice President, Transmission & Distribution** • **Chris O'Riley – Deputy CEO & Capital Infrastructure Project Delivery** • **Debbie Nagle – Sr. Vice President & Chief Human Resources Officer** • **Cheryl Yaremko – Executive Vice President, Finance and Chief Financial Officer** • **Keith Anderson – Vice President, Customer Service** • **Renate Kurschner – Director, Generation Resource Management** • **Kip Morison – Chief Information Officer (acting)**	**No Update**
2015	**Technology Governance**	**As of April 2015:** • **Greg Reimer (Chair) – Executive Vice President, Transmission & Distribution** • **Chris O'Riley – Deputy CEO & Capital Infrastructure Project Delivery** • **Debbie Nagle – Sr. Vice President & Chief Human Resources Officer** • **Cheryl Yaremko – Executive Vice President, Finance and Chief Financial Officer** • **Keith Anderson – Vice President, Customer Service** • **Kip Morison – Chief Information Officer (acting until June) Chief Information Officer (June onwards)** • **Mark Poweska – Sr. Vice President, Generation**	**No Update**

Year	Management Committee Name	Committee Composition	Committee Mandate or Terms of Reference
2015	**Technology Governance**	**As of August 2015:** • **Greg Reimer (Chair) – Executive Vice President, Transmission & Distribution** • **Chris O'Riley – Deputy CEO & Capital Infrastructure Project Delivery** • **Debbie Nagle – Sr. Vice President & Chief Human Resources Officer** • **Cheryl Yaremko – Executive Vice President, Finance and Chief Financial Officer** • **Mark Poweska – Sr. Vice President, Generation** • **Kip Morison – Chief Information Officer**	**Attachment 20**
2015	**Technology Governance**	**As of November 2015:** • **Greg Reimer (Chair) – Executive Vice President, Transmission & Distribution Chris O'Riley – Deputy CEO & Capital Infrastructure Project Delivery** • **Debbie Nagle – Sr. Vice President & Chief Human Resources Officer** • **Cheryl Yaremko – Executive Vice President, Finance& Supply Chain and Chief Financial Officer** • **Mark Poweska – Sr. Vice President, Generation** • **Kip Morison – Chief Information Officer** • **Ray Aldeguer – Sr. Vice President, Corporate Services & General Counsel**	**Attachment 21**

In 2016 BC Hydro established the Executive Team Mandate for Review & Approval of Technology Initiatives, which is Attachment 22 to this response.

ORGANIZATIONAL STRUCTURE – EXECUTIVE OF BC HYDRO

BC Hydro's organizational structure is designed to ensure we deliver on our Guiding Principles and to facilitate coordination among business functions. The structure includes operational business groups, a corporate function and two subsidiaries, Powerex and Powertech (see page 10 for more information on our subsidiaries). As of March 31, 2009, we had 5,844 employees (regular and temporary employees, full-time count as one, part-time count as 0.5).

Minister Responsible
The Honourable Blair Lekstrom (Energy, Mines and Petroleum Resources) (effective January 19, 2009)
The Honourable Richard Neufeld (prior to January 19, 2009)

Board of Directors
Mossadiq Umedaly (Chairman)

President and CEO
Bob Elton
Corporate office: 10 people

CUSTOMER CARE AND CONSERVATION

Bev Van Ruyven, Executive Vice-President
Provides long-term resource planning and acquisition and customer care services, and delivers Power Smart programs.

People: 466.5

CORPORATE HUMAN RESOURCES

Debbie Nagle, Chief HR Officer (effective July 7, 2008)
(Lois Nahirney, Acting Chief HR Officer, resigned July 7, 2008)
Responsible for attraction and workforce planning, organizational effectiveness and total rewards programs.

People: 64.5

SAFETY, HEALTH AND ENVIRONMENT

Ray Stewart, Chief Safety, Health and Environment Officer
Responsible for strategic direction and governance in relation to occupational safety and health, environment and sustainability, public safety, emergency management, security and dam safety matters.

People: 45

POWEREX

Teresa Conway, President and CEO
A wholly-owned subsidiary of BC Hydro, Powerex's energy marketing and trade activities help optimize BC Hydro electric system resources.

People: 171

CORPORATE AFFAIRS

Susan Yurkovich, Senior Vice-President
Responsible for marketing and strategic communications, community and stakeholder engagement, community investment, as well as corporate projects, including Site C and the 2010 Olympic Initiative.

People: 141

FINANCE AND CORPORATE RESOURCES

Charles Reid, Executive Vice-President and CFO (effective August 18, 2008)
Trish Pekeles, Acting CFO (April to August 2008)
Alister Cowan (resigned April 5, 2008)
Responsible for several enterprise-wide functions, including finance, regulatory, risk management, information technology, procurement, legal, properties and strategy.
People: 420.5

FIELD OPERATIONS

Leigh Ann Shoji-Lee, Senior Vice-President (effective December 1, 2008)
(Gary Rodford, retired October 31, 2008)
Delivers electricity safely and reliably to customers, including extension and connection services, as well as emergency response and restoration services.
People: 2607.5

SMART METERING AND INFRASTRUCTURE PROGRAM

Michele Morgan, Senior Vice-President (effective July 3, 2008)
Oversight of Smart Metering Project, In Home Display Initiative, Grid Modernization and infrastructure upgrades.

People: 24

ENGINEERING, ABORIGINAL RELATIONS AND GENERATION

Chris O'Riley, Senior Vice-President
Responsible for BC Hydro's generating assets, engineering services for BC Hydro and BCTC and for leading the establishment of mutually beneficial relationships with Aboriginal peoples.

People: 1779.5

POWERTECH

Eamonn Percy, President and COO
A wholly-owned subsidiary of BC Hydro, Powertech's business is solving technical problems with power equipment and systems throughout their life cycle.

People: 114.5

BOARD OF DIRECTORS

MANDATE: The Board is responsible for overseeing the conduct of business, supervising management and ensuring all major issues affecting the Corporation are given proper consideration. The Board, through the Chief Executive Officer, sets the standards of conduct for BC Hydro and ensures the safety of its operations.

CHAIRMAN: Mossadiq Umedaly

MEMBERS: Chief Kim Baird (appointed April 10, 2008), James Brown (appointed June 6, 2008), Peter Busby (appointed April 10, 2008), Wanda Costuros, Jonathan Drance (appointed May 8, 2008), Tracey McVicar, Nancy Olewiler, Peter Powell (appointed May 8, 2008), Walter Saponja, Donald Triggs (appointed June 6, 2008)

Brenda Eaton (resigned December 18, 2008)

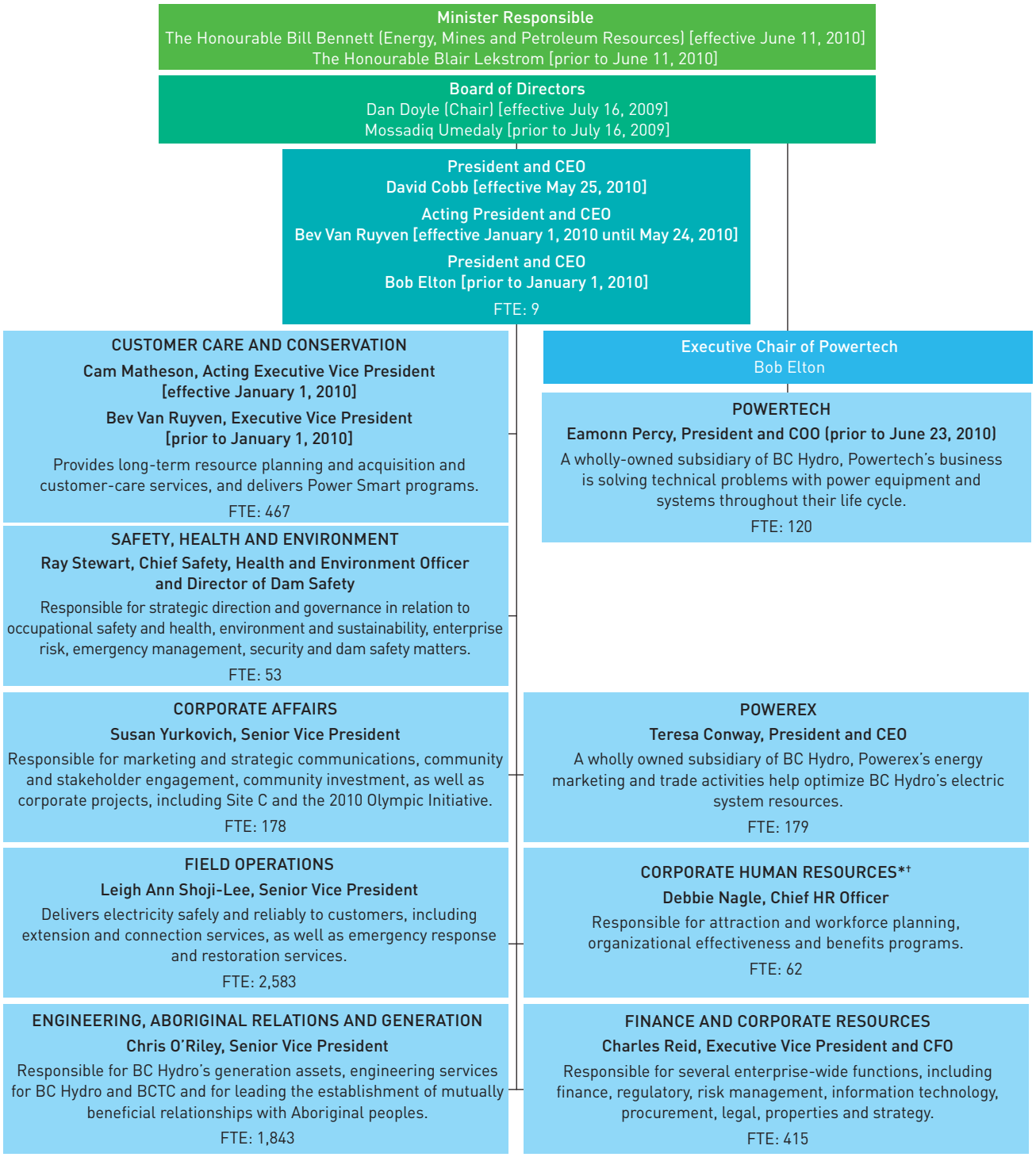
COMMITTEES OF THE BOARD

EXECUTIVE COMMITTEE	**PURPOSE:** The Executive Committee meets only in special circumstances. It has most of the powers of the Board to act in situations when, for timing reasons, a Board meeting cannot be scheduled. **CHAIRMAN:** Mossadiq Umedaly **MEMBERS:** Wanda Costuros, Jonathan Drance (appointed November 19, 2008) Brenda Eaton (resigned December 18, 2008)
AUDIT AND RISK MANAGEMENT	**PURPOSE:** The Audit and Risk Management Committee assists the Board in fulfilling its obligations and oversight responsibilities relating to the audit process, financial reporting, the system of corporate controls, governance of the Corporation's pension plans, and various facets of risk management. **CHAIR:** Tracey McVicar **MEMBERS:** Wanda Costuros, Peter Powell, Walter Saponja, Mossadiq Umedaly* Nancy Olewiler (no longer a Committee Member, November 19, 2008), Brenda Eaton (resigned December 18, 2008)
CORPORATE GOVERNANCE	**PURPOSE:** The Corporate Governance Committee assists the Board by ensuring that BC Hydro develops and implements an effective approach to corporate governance, which enables the business and affairs of the Corporation to be carried out, directed and managed with the objective of enhancing shareholder value. **CHAIR:** Jonathan Drance **MEMBERS:** Tracey McVicar (appointed November 19, 2008), Donald Triggs (appointed November 19, 2008), Mossadiq Umedaly* Wanda Costuros (no longer a Committee Member, November 19, 2008), Brenda Eaton (resigned December 18, 2008)
HUMAN RESOURCES	**PURPOSE:** The Human Resources Committee assists the Board in fulfilling its obligations relating to human resources and compensation issues, related specifically to senior management and generally to the Corporation. The Committee also monitors safety performance. **CHAIR:** Nancy Olewiler **MEMBERS:** James Brown (appointed November 19, 2008), Jonathan Drance (appointed November 19, 2008), Donald Triggs (appointed November 19, 2008), Mossadiq Umedaly* Chief Kim Baird (no longer a Committee Member, November 19, 2008), Walter Saponja (no longer a Committee Member, November 19, 2008),
CAPITAL PROJECTS formed: November 19, 2008	**PURPOSE:** The Capital Projects Committee assists the Board in fulfilling its obligations and oversight responsibilities relating to the Corporation's long-term capital plans, capital budgets and capital projects, including risk identification and management, dam safety, Aboriginal Relations and negotiations, and transmission projects. **CHAIR:** Walter Saponja **MEMBERS:** Chief Kim Baird, Jonathan Drance, Peter Powell, Mossadiq Umedaly*

ORGANIZATIONAL STRUCTURE—EXECUTIVE OF BC HYDRO

BC Hydro's organizational structure is designed to ensure we deliver on our six short-term priorities and to facilitate coordination among business functions. The structure includes operational business groups, a corporate function and two subsidiaries, Powerex and Powertech (for more information, see our subsidiaries on page 126). This year, we have shifted the way in which we count our employee population. Instead of using a traditional headcount, we have shifted to the use of a full-time equivalent count (FTE) measure based on hours worked, which accounts more accurately for part-time and seasonal work performed for the company. The full-time equivalent measure for fiscal 2010 is 5,673. Specific full-time equivalent measures for each business group are included in the chart below.

The Powertech President and COO reports to the Chair of the Powertech Board. All other executives report to BC Hydro's President and CEO.



**MPIDs are typically costed and bundled with Corporate HR in the payroll and finance systems, and may have been reported as 'with' Corporate HR in the past.*

† 2010 VANOC Secondees were reported in the BCH finance cubes as 'with' Corporate HR, but were simply held there for costing purposes.

BOARD OF DIRECTORS

MANDATE: The Board is responsible for overseeing the conduct of business, supervising management and ensuring all major issues affecting the Corporation are given proper consideration. The Board, through the Chief Executive Officer, sets the standards of conduct for BC Hydro and ensures the safety of its operations.

CHAIR: Dan Doyle (effective July 16, 2009); Mossadiq Umedaly (prior to July 16, 2009)

MEMBERS: Chief Kim Baird, James Brown, Peter Busby, Wanda Costuros, Jonathan Drance, Tracey McVicar, Nancy Olewiler, Peter Powell, John Ritchie (appointed November 1, 2009),Walter Saponja (resigned October 1, 2009), Donald Triggs (resigned January 31, 2010).

SPECIAL ADVISOR: Bob Elton (effective January 1, 2010)

COMMITTEES OF THE BOARD

EXECUTIVE COMMITTEE	**PURPOSE:** The Executive Committee meets only in special circumstances. It has most of the powers of the Board to act in situations when, for timing reasons, a Board meeting cannot be scheduled. **CHAIRMAN:** Dan Doyle (effective July 16, 2009); Mossadiq Umedaly (prior to July 16, 2009) **MEMBERS:** Wanda Costuros, Jonathan Drance
AUDIT AND RISK MANAGEMENT COMMITTEE	**PURPOSE:** The Audit and Risk Management Committee assists the Board in fulfilling its obligations and oversight responsibilities relating to the audit process, financial reporting, the system of corporate controls, governance of the Corporation's pension plans, and various facets of risk management. **CHAIR:** Tracey McVicar **MEMBERS:** Wanda Costuros, Peter Powell, Walter Saponja (resigned October 1, 2009), Mossadiq Umedaly (prior to July 16, 2009), Dan Doyle (effective July 16, 2009)*
CORPORATE GOVERNANCE COMMITTEE	**PURPOSE:** The Corporate Governance Committee assists the Board by ensuring that BC Hydro develops and implements an effective approach to corporate governance, which enables the business and affairs of the Corporation to be carried out, directed and managed with the objective of enhancing Shareholder value. **CHAIR:** Jonathan Drance **MEMBERS:** Tracey McVicar, Donald Triggs (resigned January 31, 2010), Mossadiq Umedaly (prior to July 16, 2009), Dan Doyle (effective July 16, 2009)*
HUMAN RESOURCES AND SAFETY COMMITTEE (renamed in August 2009)	**PURPOSE:** The Human Resources Committee assists the Board in fulfilling its obligations relating to human resources and compensation issues, related specifically to senior management and generally to the Corporation. The Committee also monitors safety performance. **CHAIR:** Nancy Olewiler **MEMBERS:** James Brown, Jonathan Drance, Donald Triggs (resigned January 31, 2010), Mossadiq Umedaly (prior to July 16, 2009), Dan Doyle (effective July 16, 2009)*
CAPITAL PROJECTS COMMITTEE	**PURPOSE:** The Capital Projects Committee assists the Board in fulfilling its obligations and oversight responsibilities relating to the Corporation's long-term capital plans, capital budgets and capital projects, including risk identification and management, dam safety, Aboriginal Relations and negotiations, and transmission projects. **CHAIR:** Walter Saponja (resigned October 1, 2009); Peter Powell (effective October 1, 2009) **MEMBERS:** Chief Kim Baird, Jonathan Drance, Peter Powell (appointed Acting Chair, October 1, 2009), John Ritchie (appointed November 5, 2009), Mossadiq Umedaly (prior to July 16, 2009), Dan Doyle (effective July 16, 2009)*
CONSERVATION AND CLIMATE ACTION COMMITTEE (renamed and elevated to Committee status November 5, 2009)	**PURPOSE:** The Conservation and Climate Action Committee of the Board of Directors assists the Board by monitoring and supporting the implementation of an energy conservation strategy as described by the BC Energy Plan, as well as climate action and other environmental matters. **CHAIR:** Peter Busby **MEMBERS:** Chief Kim Baird, Nancy Olewiler, Mossadiq Umedaly (prior to July 16, 2009), Dan Doyle (effective July 16, 2009)*

ADVISORY COMMITTEE

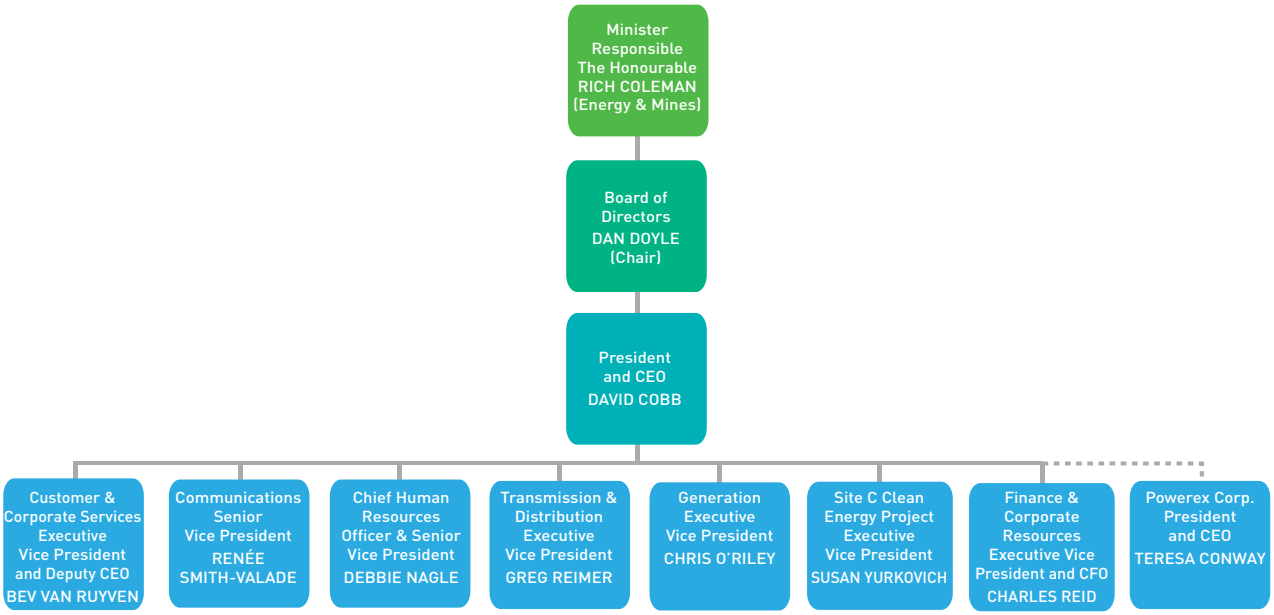
THE PEACE RIVER / WILLISTON RESERVOIR ADVISORY COMMITTEE	The Board appoints Advisory Committees from time to time. This Advisory Committee provides advice and facilitates two-way communications between the Peace/Williston community and BC Hydro. Committee membership is composed of local community leaders, providing equitable representation from geographical and special interest groups within the region. **CHAIR:** Jack Weisgerber **MEMBERS:** Lori Ackerman (Fort St. John), Rick Hopkins (Fort St. John), Wayne Dahlin (Dawson Creek, appointed May 22, 2009), Don Hicks (Chetwynd, appointed May 22, 2009), Gwen Johansson (Hudson's Hope), Terry Johnson (Taylor), Kevin Neary (Mackenzie), Leigh Summer (Hudson's Hope), Stephanie Killam (Mackenzie, appointed May 22, 2009), Chief Ella Pierre (Tsay Keh Dene, appointed May 22, 2009), Ron Terlesky (Mackenzie), Donny Van Somer (Kwadacha)

CORPORATE GOVERNANCE

DIRECTORS, OFFICERS AND EXECUTIVE OF BC HYDRO

BC Hydro's organizational structure is designed to integrate former BCTC's business with BC Hydro, ensure we deliver on our strategic objectives, and the ambitious mandate of the *Clean Energy Act*, and facilitate coordination among business functions.

The following chart shows the current organizational structure of the Executive Team.



CUSTOMER AND CORPORATE SERVICES—Responsible for several functions, including Aboriginal Relations and Negotiations, Power Smart and Customer Care, Integrated Resource Planning, the Smart Metering and Infrastructure Program, Economic and Business Development, and the office of the Chief Safety, Health and Environment Officer.

COMMUNICATIONS—Responsible for strategic communications, engagement and outreach that support BC Hydro's key business objectives and help deliver success through relationships.

CORPORATE HUMAN RESOURCES—Responsible for attraction and workforce planning, organizational effectiveness and Total Rewards programs.

TRANSMISSION AND DISTRIBUTION—Responsible for building, maintaining and planning the systems and assets needed to deliver electricity safely and reliably to BC Hydro customers.

GENERATION—Responsible for the operations and maintenance of, and engineering and long-term reinvestment in, BC Hydro's heritage generating assets and dams.

SITE C CLEAN ENERGY PROJECT—Responsible for the Site C Clean Energy project.

FINANCE AND CORPORATE RESOURCES—Responsible for several enterprise-wide functions, including finance, regulatory, information technology, procurement, legal, properties and strategy.

POWEREX CORP.—A subsidiary responsible for export, marketing and trade activities to optimize BC Hydro's electric system resources.

STANDING COMMITTEES

AUDIT & RISK MANAGEMENT PURPOSE: The Audit and Risk Management Committee assists the Board in fulfilling its obligations and oversight responsibilities relating to the audit process, financial reporting, the system of corporate controls, governance of the Corporation's pension plans and various facets of risk management.	TRACEY MCVICAR—CHAIR Larry Blain *(appointed December 6, 2010)* James Brown *(appointed March 31, 2011)* Dan Doyle[1] Stephen Bellringer *(appointed September 16, 2010; ceased to be a member March 31, 2011)* Wanda Costuros *(resigned September 17, 2010)* Peter Powell *(resigned June 29, 2010)*
CAPITAL PROJECTS PURPOSE: The Capital Project Committee assists the Board in fulfilling its obligations and oversight responsibility relating to the Corporation's long-term capital plans, capital budgets and capital projects, including risk identification and management, dam safety, and Aboriginal relations and negotiations.	DAN DOYLE—ACTING CHAIR John Knappett *(appointed September 16, 2010)* John Ritchie Chief Kim Baird *(ceased to be member September 16, 2010)* Jonathan Drance *(resigned December 6, 2010)* Peter Powell *(resigned June 29, 2010)*
CONSERVATION & CLIMATE ACTION PURPOSE: The Conservation and Climate Action Committee assists the Board by monitoring and supporting the implementation of an energy conservation strategy as described by the BC Energy Plan, as well as climate action and other environmental matters.	PETER BUSBY—CHAIR Chief Kim Baird Tracey McVicar *(appointed September 16, 2010)* Janine North *(appointed November 10, 2010)* Dan Doyle[1] Nancy Olewiler *(resigned September 30, 2010)*
CORPORATE GOVERNANCE (prior to September 16, 2010) PURPOSE: The Corporate Governance Committee has independent Terms of Reference and is responsible for ensuring that BC Hydro and its Board develops and implements an effective approach to corporate governance. This shall enable the business and affairs of the Corporation to be carried out, directed and managed with the objective of ensuring compliance with established governance practices and the Code of Conduct, as well as following sound ethical principles.	JONATHAN DRANCE—CHAIR *(resigned December 6, 2010)* Tracey McVicar John Ritchie Dan Doyle[1]
CORPORATE GOVERNANCE (Committee of the Whole, effective September 16, 2010) PURPOSE: The Corporate Governance Committee was restructured as a Committee of the Whole. This means that its membership includes all directors. Nonetheless, its purpose remains as outlined above.	STEPHEN BELLRINGER—CHAIR *(appointed September 16, 2010)* Chief Kim Baird Larry Blain James Brown Peter Busby John Knappett Tracey McVicar Janine North John Ritchie Dan Doyle[1] Jonathan Drance *(resigned December 6, 2010)* Nancy Olewiler *(resigned September 30, 2010)*
EXECUTIVE (prior to September 16, 2010) PURPOSE: The Executive Committee only meets in special circumstances. It has the full powers of the Board to act in situations when, for timing reasons, a Board meeting cannot be scheduled.	DAN DOYLE—CHAIR Wanda Costuros *(resigned September 17, 2010)* Jonathan Drance *(resigned December 6, 2010)*
EXECUTIVE (consists of committee chairs effective September 16, 2010) PURPOSE: As outlined above.	DAN DOYLE—CHAIR Chief Kim Baird Stephen Bellringer Larry Blain Peter Busby Tracey McVicar Jonathan Drance *(resigned December 6, 2010)*
ENERGY PLANNING & PROCUREMENT (formed September 16, 2010) PURPOSE: The purpose of the Energy Planning and Procurement Committee is to provide advice and direction to the Corporation, through the Board, with respect to both its strategic direction relating to export strategy, economic development and energy procurement activities and its execution of related initiatives. In addition, the Committee will provide advice and support to the Board Chair in his dealings with government pertaining to these issues.	LARRY BLAIN—CHAIR Peter Busby John Ritchie Dan Doyle[1]
HUMAN RESOURCES & SAFETY PURPOSE: The Human Resources and Safety Committee assists the Board in fulfilling its obligations relating to human resources and compensation issues, related specifically to senior management and generally to the Corporation. The Committee also monitors safety performance.	CHIEF KIM BAIRD—CHAIR *(appointed September 16, 2010)* Stephen Bellringer *(appointed March 31, 2011)* Janine North *(appointed November 10, 2010)* Dan Doyle[1] James Brown *(ceased to be a member March 31, 2011)* Nancy Olewiler *(resigned September 30, 2010)*

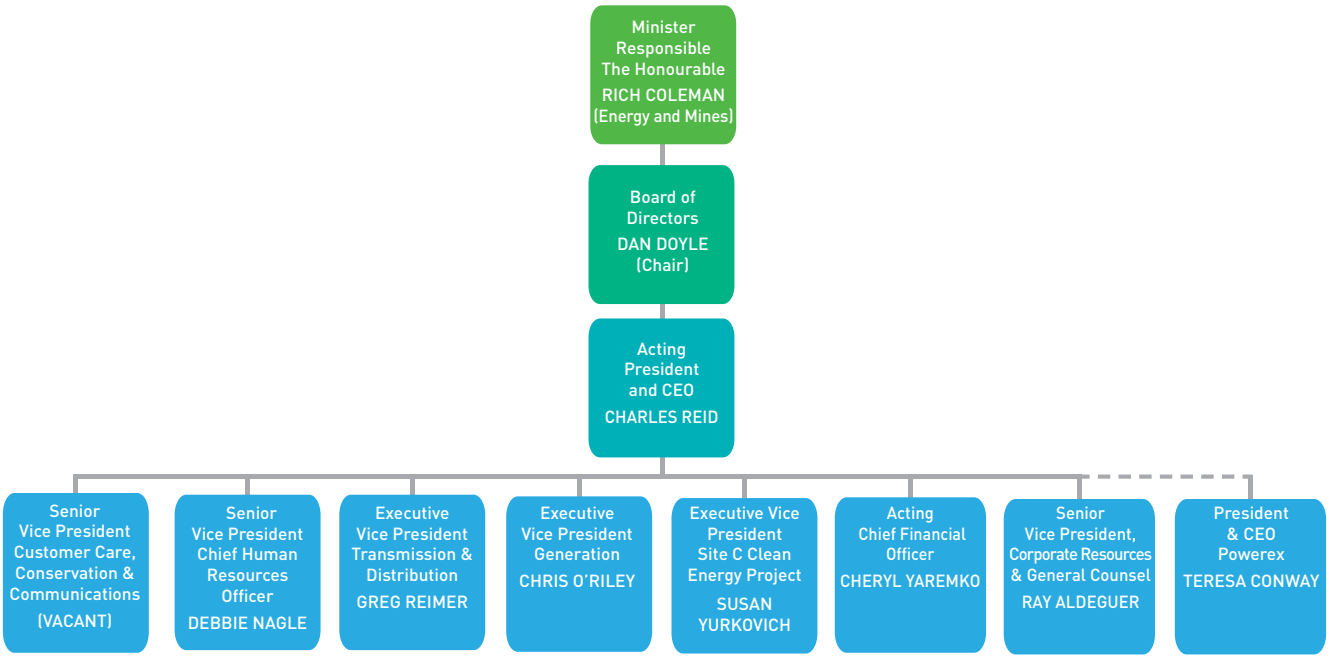
[1] *The Board Chair is an ex-officio member of all Committees.*

CORPORATE GOVERNANCE

EXECUTIVE OF BC HYDRO

BC Hydro's organizational structure is designed to ensure it delivers on its strategic objectives and the mandate of the *Clean Energy Act*; and facilitates coordination among business functions. BC Hydro regularly reviews and updates its governance framework to ensure business needs are met.

The following chart shows the current organizational structure of the Executive Team.



Customer Care, Conservation and Communications—Responsible for Demand Side Management programs, customer relations and strategic communications that support BC Hydro's key business objectives.

Corporate Human Resources—Responsible for attraction and workforce planning, organizational effectiveness and benefits programs and the office of the Chief Safety, Health and Environment Officer.

Transmission & Distribution—Responsible for planning, designing, building, maintaining and operating the systems and assets needed to deliver electricity safely and reliably to customers, as well as Aboriginal Relations & Negotiations and the implementation of the Smart Metering & Infrastructure Program.

Generation—Responsible for safely managing BC Hydro's generation assets to provide a reliable supply of clean energy.

Site C Clean Energy Project—Responsible for the Site C Clean Energy Project.

Finance and Corporate Resources—Responsible for several enterprise-wide functions, including Finance, Regulatory, Information Technology, Security, Procurement, Properties, Legal, Energy Procurement, Planning and Risk, and Economic and Business Development.

Powerex—A wholly owned subsidiary of BC Hydro, responsible for energy marketing and trade activities that help optimize BC Hydro's electric system resources.

STANDING COMMITTEES

AUDIT AND FINANCE *(renamed September 2011)*	**Tracey McVicar – Chair** Larry Blain James Brown Dan Doyle*	**Purpose:** The Audit and Finance Committee assists the Board in fulfilling its obligations and oversight responsibilities relating to the audit process, financial reporting, the system of corporate controls, governance of the Corporation's pension plans, internal audit functions, treasury and legal compliance, as well as various facets of risk management.
CAPITAL PROJECTS	**John Ritchie – Chair** *(appointed Chair August 11, 2011)* John Knappett Dan Doyle*	**Purpose:** The Capital Project Committee assists the Board in fulfilling its obligations and oversight responsibility relating to the Corporation's long-term capital plans, capital budgets and capital projects, including risk identification and management, dam safety and Aboriginal relations and negotiations.
CONSERVATION AND CLIMATE ACTION	**Janine North – Chair** *(appointed Chair November 4, 2011)* Chief Kim Baird Tracey McVicar Dan Doyle* Peter Busby *(resigned October 14, 2011)*	**Purpose:** The Conservation and Climate Action Committee of the Board assists the Board by monitoring and supporting the implementation of an energy conservation strategy as described by the BC Energy Plan, as well as climate action and other environmental matters.
CORPORATE GOVERNANCE *(Committee of Whole)*	**Stephen Bellringer – Chair** Chief Kim Baird Brad Bennett *(appointed January 26, 2012)* Larry Blain James Brown John Knappett Tracey McVicar Janine North John Ritchie Dan Doyle* Peter Busby *(resigned October 14, 2011)*	**Purpose:** The Corporate Governance Committee has independent Terms of Reference and is responsible for ensuring that BC Hydro and its Board develops and implements an effective approach to corporate governance. This shall enable the business and affairs of the Corporation to be carried out, directed and managed with the objective of ensuring compliance with established governance practices and the Code of Conduct, as well as following sound ethical principles.
ENERGY PLANNING AND PROCUREMENT	**Larry Blain – Chair** John Ritchie Dan Doyle* Peter Busby *(resigned October 14, 2011)*	**Purpose:** The purpose of the Energy Planning and Procurement Committee is to provide advice and direction to the Corporation, through the Board, with respect to both its strategic direction relating to export strategy, economic development and energy procurement activities and its execution of related initiatives. In addition, the Committee will provide advice and support to the Board Chair in his or her dealings with government pertaining to these issues.
EXECUTIVE *(consists of committee chairs)*	**Dan Doyle – Chair** Chief Kim Baird Stephen Bellringer Larry Blain Tracey McVicar Janine North John Ritchie Peter Busby *(resigned October 14, 2011)*	**Purpose:** The Executive Committee only meets in special circumstances. It has the full powers of the Board to act in situations when, for timing reasons, a Board meeting cannot be scheduled.
HUMAN RESOURCES AND SAFETY	**Chief Kim Baird – Chair** Stephen Bellringer Janine North Dan Doyle*	**Purpose:** The Human Resources and Safety Committee assists the Board in fulfilling its obligations relating to human resources and compensation issues, related specifically to senior management and generally to the Corporation. The Committee also monitors safety performance.

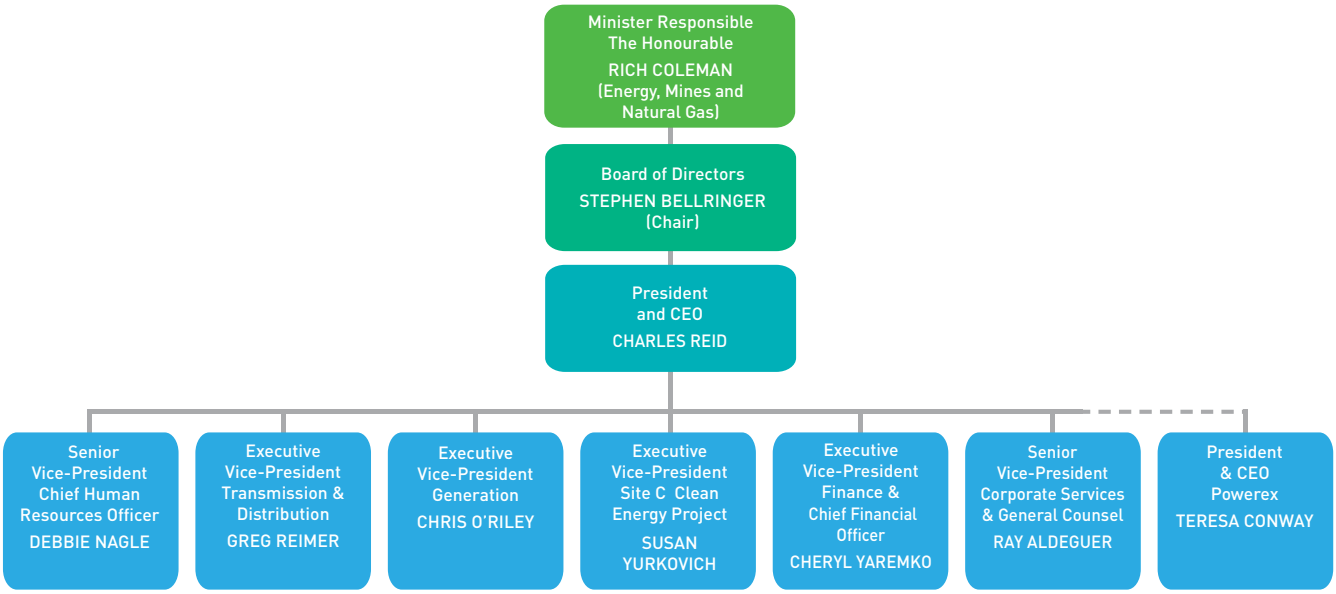
** The Board Chair is an ex-officio member of all Committees.*

CORPORATE GOVERNANCE

EXECUTIVE OF BC HYDRO

BC Hydro's organizational structure is designed to ensure we deliver on our strategic objectives and the mandate of the *Clean Energy Act*; and facilitates coordination among business functions. BC Hydro regularly reviews and updates the governance framework to ensure business needs are met.

The following chart shows the current organizational structure of the Executive Team.



BC Hydro is committed to best practices in corporate governance. Strong corporate governance practices provide for greater public accountability and transparency.

BC Hydro's practices and policies meet the "Best Practice Guidelines on Governance and Disclosure" for public sector organizations, which was issued by the B.C. Provincial Government in February 2005.

The governance framework is reviewed regularly to ensure it meets BC Hydro's ongoing business needs, while being consistent with the government's guidelines.

The links below provide further information about our Board of Directors and our Corporate Code of Conduct:

http://www.bchydro.com/about/who_we_are/board_of_directors.html; and,

http://www.bchydro.com/about/who_we_are/corporate_citizenship/code_of_conduct/corporate_governance.html

BC HYDRO BOARD OF DIRECTORS

The BC Hydro Board of Directors oversees the conduct of business and supervises management, which in turn is responsible for the day-to-day operations of BC Hydro. Directors are appointed by the B.C. Cabinet to bring special skills and experience to the Board's deliberations.

CHAIR: **Stephen Bellringer** MEMBERS: **Kim Baird, Brad Bennett, Larry Blain, James Brown, James Hatton** (appointed Jan. 17, 2013) **John Knappett, Tracey McVicar, Janine North, John Ritchie**

The Board's broad set of responsibilities includes:

- Ensuring there is a strategic and business planning process, and then reviewing, validating and endorsing a strategy for the Corporation and monitoring its implementation.
- Ensuring that effective controls and appropriate governance are in place as part of its oversight of management.
- Having a continuing understanding of the principal risks associated with the Corporation's business and ensuring that the appropriate processes and systems are in place to mitigate that risk.
- The Board acts in accordance with the Best Practices Guidelines Governance and Disclosure Guidelines for Governing Boards of B.C. Public Sector Organizations, which can be found at: fin.gov.bc.ca/brdo/governance/index.asp. More information on the Board can be found at bchydro.com/about/company_information/board_committees.html.

AUDIT AND FINANCE COMMITTEE* CHAIR: Tracey McVicar MEMBERS: Larry Blain, Jamie Brown	**Purpose:** The Audit and Finance Committee assists the Board in fulfilling its obligations and oversight responsibilities relating to the audit process, financial reporting, information technology and telecommunications, the system of corporate controls and governance of the Corporation's pension plans. The Committee is also responsible for ensuring that principal risks associated with these issues are appropriately identified, monitored and managed.
CAPITAL PROJECTS COMMITTEE* CHAIR: John Ritchie MEMBERS: Brad Bennett, John Knappett	**Purpose:** The Capital Projects Committee assists the Board of Directors in fulfilling its obligations and oversight responsibilities relating to the Corporation's long-term capital plans, capital budgets and capital projects, including dam safety, aboriginal relations and negotiations, and transmission projects. The Committee is also responsible for ensuring that principal risks associated with these issues are appropriately identified, monitored and managed.
CONSERVATION AND CLIMATE ACTION COMMITTEE* CHAIR: Janine North MEMBERS: Kim Baird, Tracey McVicar	**Purpose:** The Conservation and Climate Action Committee assists the Board by monitoring and directing the environmental performance of the Corporation and monitoring and supporting the implementation of an energy conservation strategy as described in the BC Energy Plan. The Committee also provides guidance and direction to management and makes recommendations to the Board regarding initiatives and programs related to meeting the Corporation's environmental goals. The Committee is also responsible for ensuring that principal risks associated with these issues are appropriately identified, monitored and managed.
CORPORATE GOVERNANCE COMMITTEE CHAIR: Stephen Bellringer MEMBERS: All Directors	**Purpose:** The Corporate Governance Committee is structured as a Committee of the Whole. This means that its membership includes all Directors. Nonetheless, the Committee has independent Terms of Reference and is responsible for ensuring that BC Hydro and its Board develops and implements an effective approach to corporate governance which enables the business and affairs of the Corporation to be carried out, directed and managed with the objective of enhancing shareholder value. The Committee is also responsible for ensuring that principal risks associated with these issues are appropriately identified, monitored and managed.
EXECUTIVE COMMITTEE CHAIR: Stephen Bellringer MEMBERS: Kim Baird, Larry Blain, Janine North, Tracey McVicar John Ritchie	**Purpose:** The Executive Committee only meets in special circumstances. It has the full powers of the Board to act in situations when, for timing reasons, a Board meeting cannot be scheduled.
ENERGY PLANNING AND PROCUREMENT COMMITTEE* CHAIR: Larry Blain MEMBERS: Brad Bennett, Janine North John Ritchie	**Purpose:** The Energy Planning and Procurement Committee provides advice and direction to the Corporation on both its strategic direction relating to resource planning, export strategy, economic development and energy procurement activities, and its execution of related initiatives. In addition, the Committee provides advice and support to the Board Chair in his or her dealings with government pertaining to these issues. The Committee is also responsible for ensuring that principal risks associated with these issues are appropriately identified, monitored and managed.
HUMAN RESOURCES AND SAFETY COMMITTEE CHAIR: Kim Baird MEMBERS: Janine North, Stephen Bellringer	**Purpose:** The Human Resources and Safety Committee assists the Board in fulfilling its obligations relating to human resources and compensation issues, related specifically to senior management and generally to the Corporation. The Committee also monitors safety performance. The Committee is also responsible for ensuring that principal risks associated with these issues are appropriately identified, monitored and managed.

*The Board Chair is an ex-officio member of all committees.

GOVERNMENT'S LETTER OF EXPECTATIONS

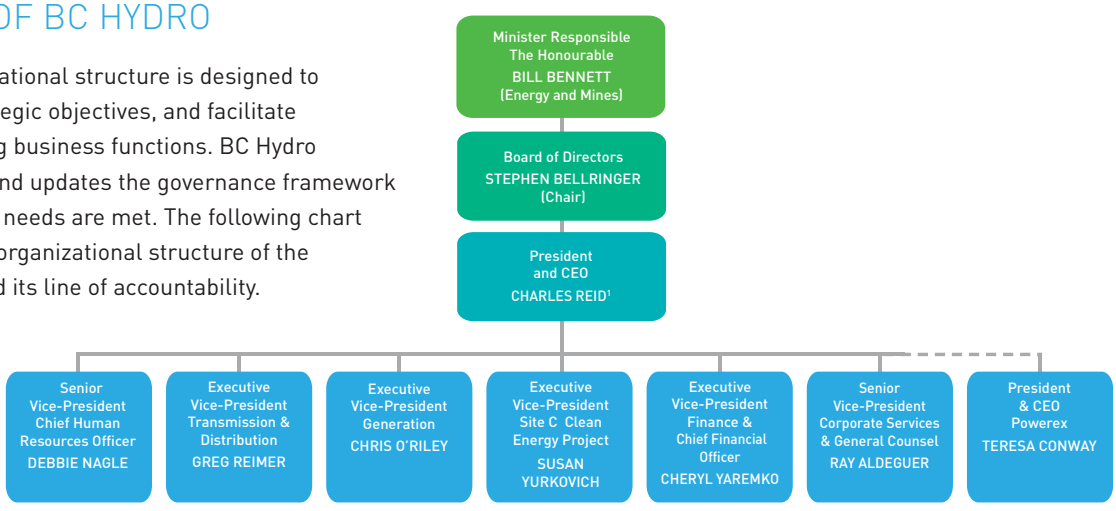
The *B.C. Government's Letter of Expectations* (*GLE*) describes the relationship between BC Hydro and the Province, and sets out objectives that the Province wishes BC Hydro to achieve. http://www.bchydro.com/content/dam/BCHydro/customer-portal/documents/corporate/accountability-reports/openness-accountability/governments-letter-of-expectations.pdf

The Objectives laid out in the 2013 Letter and BC Hydro's accomplishments are outlined below:

Government Objectives for BC Hydro	BC Hydro's action...
BC Hydro will work to implement the Integrated Resource Plan approved by the Shareholder.	BC Hydro filed the Final Draft Integrated Resource Plan submission with government in November 2013 and the IRP was approved shortly thereafter.
Consistent with the recommendations of the BC Hydro Review Panel, BC Hydro will continue to work to find cost savings and maintain competitive rates by efficiently and responsibly managing the business.	BC Hydro completed all of the 50 recommendations directed to BC Hydro by the end of March 2014. For example, BC Hydro delivered its planned operating cost savings of $391 million over the three year rate filing period of fiscal 2012 to 2014, and the fiscal 2014 target reductions for headcount and resulting labour savings were also achieved.
Work in collaboration with the Shareholder to ensure that adequate supplies of electricity are available to support new investments in liquefied natural gas and mines, consistent with *Canada Starts Here: The BC Jobs Plan*.	BC Hydro has prepared to supply the electricity requirements of the LNG industry. Under the government's LNG strategy, proponents are required to contribute capital for infrastructure development and to the electricity supply required to serve each operation. BC Hydro and government have continued commercial discussions with LNG proponents who have requested electricity supply. Ultimately, industry will decide what energy source they use to power operations. BC Hydro's Integrated Resource Plan also includes an expected LNG load to be served by BC Hydro of 360 MW (3,000 GWh). In support of mining development, BC Hydro entered into an innovative contractual arrangement with Imperial Metals for a transmission extension to serve the Red Chris mine. Under the agreement, Imperial Metals builds the transmission line to BC Hydro standards and then transfers it to BC Hydro ownership for a pre-determined price.
BC Hydro will advance Site C through the environmental assessment process, including consultation and input by the public, Aboriginal groups, communities in the region, property owners and stakeholders. BC Hydro-led consultations for Site C are proceeding to ensure regulatory timelines are met, and will be coordinated with other Natural Resource Sector consultations being undertaken by the Shareholder.	The Site C Clean Energy Project is undergoing a cooperative federal-provincial environmental assessment, which included a Joint Review Panel process. BC Hydro submitted a Site C Environmental Impact Statement in January 2013. The project entered the Panel stage in August 2013 and a public hearing process took place between December 9, 2013 and January 23, 2014. The Panel stage concluded in May 2014 with the submission of a Joint Review Panel report to federal and provincial governments. The report of the Joint Review Panel, along with other relevant information, will be considered by the federal and provincial governments as part of their decision making process for the Site C project. A decision on environmental certification is expected in the fall of 2014.

EXECUTIVE OF BC HYDRO

BC Hydro's organizational structure is designed to deliver on our strategic objectives, and facilitate coordination among business functions. BC Hydro regularly reviews and updates the governance framework to ensure business needs are met. The following chart shows the current organizational structure of the Executive Team and its line of accountability.



[1] *As of July 14, 2014, Jessica McDonald replaces retiring President and CEO, Charles Reid.*

BOARD COMMITTEES[1]

AUDIT AND FINANCE COMMITTEE **Chair:** Tracey McVicar **Members:** Larry Blain, James Brown	**Purpose:** The Audit and Finance Committee assists the Board in fulfilling its obligations and oversight responsibilities relating to the audit process, financial reporting, treasury, information technology and telecommunications, the system of corporate controls and governance of the Corporation's pension plans. The Committee is also responsible for ensuring that principal risks associated with these issues are appropriately identified, monitored and managed.
CAPITAL PROJECTS COMMITTEE **Chair:** John Ritchie **Members:** Brad Bennett, James Hatton, John Knappett	**Purpose:** The Capital Projects Committee assists the Board of Directors in fulfilling its obligations and oversight responsibilities relating to the Corporation's long-term capital plans, capital budgets and capital projects, including dam safety, and Aboriginal relations & negotiations. The Committee is also responsible for ensuring that principal risks associated with these issues are appropriately identified, monitored and managed.
CONSERVATION AND CLIMATE ACTION COMMITTEE[2] **Chair:** Janine North **Members:** Kim Baird[3], James Hatton, Tracey McVicar	**Purpose:** The Conservation and Climate Action Committee assists the Board by monitoring and directing the environmental performance of the Corporation and monitoring and supporting the implementation of an energy conservation strategy as described in the BC Energy Plan. The Committee also provides guidance and direction to management and makes recommendations to the Board regarding initiatives and programs related to meeting the Corporation's environmental goals. The Committee is also responsible for ensuring the principal risks associated with these issues are appropriately identified, monitored and managed.
CORPORATE GOVERNANCE COMMITTEE **Chair:** Brad Bennett **Members:** All Directors	**Purpose:** The Corporate Governance Committee is structured as a Committee of the Whole. This means that its membership includes all Directors. Nonetheless, the Committee has independent Terms of Reference and is responsible for ensuring that BC Hydro and its Board develops and implements an effective approach to corporate governance which enables the business and affairs of the Corporation to be carried out, directed and managed with the objective of enhancing shareholder value. The Committee is also responsible for ensuring the principal risks associated with these issues are appropriately identified, monitored and managed.
EXECUTIVE COMMITTEE **Chair:** Stephen Bellringer **Members:** Kim Baird[3], Brad Bennett, Larry Blain, Janine North, Tracey McVicar, John Ritchie	**Purpose:** The Executive Committee only meets in special circumstances. It has the full powers of the Board to act in situations when, for timing reasons, a Board meeting cannot be scheduled.
ENERGY PLANNING AND PROCUREMENT COMMITTEE[4] **Chair:** Larry Blain **Members:** Brad Bennett, Janine North, John Ritchie	**Purpose:** The Energy Planning and Procurement Committee provides advice and direction to the Corporation on its strategic direction relating to resource planning, export strategy, economic development, and energy procurement activities, and on its execution of related initiatives. In addition, the Committee provides advice and support to the Board Chair in his or her dealings with government pertaining to these issues. The Committee is also responsible for ensuring that principal risks associated with these issues are appropriately identified, monitored and managed.
HUMAN RESOURCES AND SAFETY COMMITTEE[5] **Chair:** Kim Baird[3], Janine North[6] **Members:** Janine North[6], Stephen Bellringer	**Purpose:** The Human Resources and Safety Committee assists the Board in fulfilling its obligations relating to human resources and compensation issues, related specifically to senior management and generally to the Corporation. The Committee also provides advice and direction on safety issues, and monitors safety performance. The Committee is also responsible for ensuring that principal risks associated with these issues are appropriately identified, monitored and managed.
SHAREHOLDER RELATIONS COMMITTEE[7] **Chair:** Stephen Bellringer **Members:** Brad Bennett, Janine North	**Purpose:** The Shareholder Relations Committee assists the Board by ensuring that the Corporation's strategies and operating plans are in alignment with Shareholder expectations. The Committee is also responsible for ensuring that principal risks associated with these issues are appropriately identified, monitored and managed.

1 The Board Chair is an ex-officio member of all committees.

2 The *Conservation and Climate Action Committee* was disbanded on January 30, 2014 and elements of its mandate transferred to the *Safety, Human Resources and Environment Committee* and the *Energy Planning, Conservation and Procurement Committee*. The names of these Committees were amended as shown here as at the same date.

3 Kim Baird resigned from the Board of Directors February 15, 2014.

4 This Committee was renamed as the Energy Planning, Conservation and Procurement Committee on January 30, 2014 and its mandate was amended to incorporate conservation matters at that time.

5 This Committee was renamed as the Safety, Human Resources and Environment Committee on January 30, 2014 and its mandate was amended to incorporate environmental matters at that time.

6 Janine North became Chair of this Committee effective February 15, 2014.

7 This Committee was created on September 18, 2013.

TERMS OF REFERENCE FOR THE AUDIT AND RISK MANAGEMENT COMMITTEE

Purpose

Primary responsibility for the Corporation's financial reporting, accounting systems, risk management, management plans and budgets, internal controls and treasury is vested in management and overseen by the Board of Directors.

The purpose of the Audit and Risk Management Committee (the "Committee") is to assist the Board of Directors in fulfilling its obligations and oversight responsibilities relating to the audit process, financial reporting, the system of corporate controls, governance of the Corporation's pension plans, internal audit functions, risk management, and legal and environmental compliance programs and when required, make recommendations to the full Board of Directors for approval.

In the process of overseeing the Corporation's audit procedures, the Committee will have unrestricted access to the Corporation's personnel and documents, and will be provided with the resources necessary to carry out its responsibilities, including the authority to engage independent counsel and other advisers as part of this resource requirement.

In fulfilling its purpose, it is the responsibility of the Committee to maintain free and open communication between the Committee, the external auditors, the internal auditors, and management of the Corporation, and to determine that all parties are aware of their responsibilities.

The Board of Directors of BC Hydro's subsidiary, Powerex Corp., has appointed its own Audit and Risk Management Committee. That committee has its own terms of reference and reports directly to the Powerex Corp. Board of Directors.

Composition

The Committee will be composed of at least three independent Directors. Determination as to whether a particular Director satisfies the requirements for membership on the Committee shall be made by the full Board of Directors.

Committee members will have a working familiarity with finance and accounting practices, and at least one Committee member will have accounting or related financial management expertise.

The External Auditors will attend Committee meetings. The External Auditors will be notified of the Committee's meeting schedule and receive the appropriate meeting materials in advance of meetings.

The Corporate Secretary will be secretary to the Committee.

Duties and Responsibilities

The Committee, in carrying out its responsibilities, believes its policies and procedures should remain flexible, in order to best react to changing conditions and circumstances. The Committee will take appropriate actions to monitor the overall corporate 'tone' for quality financial reporting, sound business risk practices, and ethical behaviour.

Subject to the powers and duties of the Board, the Committee, which shall hold a minimum of four meetings per year, will perform the following duties:

Financial Reporting

Annual Financial Statements

The Committee will review the consolidated financial statements and Management Discussion and Analysis, and recommend their approval or disapproval to the Board of Directors. The Committee will provide an explanation if it cannot recommend approval. The review must include:

a) determining whether appropriate accounting methods are being applied;
b) discussing with management and with the External Auditors:
   - all proposed changes in accounting policy,
   - the import and presentation of all large risks or uncertainties,
   - compliance with accounting standards,
   - significant adjustments arising out of the audit process,
   - related party transactions, and discuss with management the business rationale for the transactions and whether appropriate disclosures have been made,
   - major issues as to the adequacy of the Corporation's internal control over financial reporting and any specific remedial actions adopted in light of significant deficiencies or material weaknesses,
   - consideration of the effect of regulatory and accounting initiatives, as well as off-balance sheet structures, on the financial statements,
   - consideration of the judgment of both management and the external auditors about the quality, not just the acceptability of accounting principles, and
   - the clarity of the disclosures in the financial statements,
   - all estimates or judgements of management that may be material to financial reporting;
c) discussing with management and the External Auditors significant financial reporting, recording or presentation issues discussed during the fiscal period and the manner of their resolution, and
d) examining the consolidated audited annual financial statements in conjunction with the report of the External Auditors, which may include determining whether the statements:
   - properly reflect the significant accounting policies selected,
   - reflect estimates and other financial statement elements that are reasonable and consistent,
   - adequately disclose all major transactions and issues,
   - disclose all post-year-end significant events, and
   - are understandable, relevant, reliable and comparable.

Quarterly Financial Reports

The Committee will review quarterly financial reports and related information and recommend their approval or disapproval to the Board of Directors. The Board of Directors has delegated approving authority of the quarterly financial report to the Committee, in the event the Board meeting schedule proves untimely.

The quarterly financial reports are required to be reviewed by the External Auditors prior to their submission to the Committee, the results of which are discussed with the Committee.

External Audit

The Committee shall have the direct responsibility for the appointment, compensation, retention and oversight of the External Auditors (including nominating the External Auditors to be proposed for Board approval). The Committee shall serve as the ultimate authority to which the Corporation's External Auditors are accountable. The Corporation shall provide appropriate funding, as determined by the Committee, for payment of compensation to the External Auditors and any experts or advisors employed by the Committee.

The Committee shall meet with the External Auditors, as the Committee may deem appropriate, to consider any matter which the Committee or External Auditors believe should be brought to the attention of the Board or the Shareholder.

The Committee will oversee the external audit process, including:

a) determining whether the performance of the external audit is satisfactory, effective and meets the requirements of the Corporation;
b) reviewing all issues related to any proposed change in External Auditors and the planned steps for an orderly transition;
c) reviewing the terms of the External Auditors' engagement, and the appropriateness and reasonableness of the proposed audit fees;
d) review on a quarterly basis the amount of fees paid to the External Auditors and their affiliates for audit related and non-audit consulting services provided to the Corporation and its subsidiaries in accordance with best practices at public corporations;
e) at the request of management, pre-approve fee levels for audit related and non-audit related services provided to the Corporation by its External Auditors. The Committee has delegated such pre-approval to the Committee Chair on its behalf and requested management to report to the Committee on a quarterly basis;
f) reviewing the audit plan with the External Auditors and management;
g) determining whether management has provided full and open disclosure to the External Auditors' inquiries;
h) reviewing problems experienced by the External Auditors in performing the audit, including any restriction imposed by management and all significant accounting issues on which there was a disagreement with management;
i) reviewing the post-audit or management letter containing the recommendations of the External Auditors and reviewing management's response and subsequent follow-up to any significant identified weaknesses.
j) review and discuss with the External Auditors all relationships that the External Auditors and their affiliates have with the Corporation and its affiliates in order to determine the External Auditors' independence, including, without limitation (i) requesting, receiving and reviewing, on a periodic basis, a formal written statement from the External Auditors delineating all relationships that may reasonably be thought to bear on the independence of the External Auditors with respect to the Corporation (ii) discussing with the External Auditors any disclosed relationships or services that the External Auditors believe may affect the objectivity and independence of the External Auditors, and (iii) recommending that the Board take appropriate action in response to the External Auditors' report to satisfy itself of the External Auditors' independence;
k) at least annually, obtain and review a report by the External Auditors describing the auditing firm's internal quality-control procedures, any material issues raised by the most recent internal quality-control review or peer review of the auditing firm or by any inquiry or

investigation by government or professional authorities within the preceding five years respecting one or more independent audits carried out by the External Auditors and any steps taken to deal with any such issues and all relationships between the External Auditors and the Corporation.

l) After reviewing the foregoing report and the External Auditors' work throughout the year, the Committee shall evaluate the External Auditors' qualifications, performance and independence. Such evaluation should include the review and evaluation of the lead audit partner and take into account the opinions of management and the Corporation's personnel responsible for the internal audit function.

Accounting System and Internal Controls

Through discussions with management and the External and Internal Auditors, the Committee will obtain reasonable assurance that the Corporation's accounting systems are reliable and internal controls are adequate. For this purpose, the Committee may wish to direct the Auditors' examinations to particular areas and may request the Auditors to undertake special examinations.

The Committee will review the evaluation of internal controls by the External Auditors, including any recommendations for improvement of the Corporation's accounting procedures and internal controls, together with management's response.

Internal Audit

The Committee will annually review the Internal Audit Plan and the Audit Services Charter.

The review of the Internal Audit Plan should include an examination of the key risks identified for the organization and the appropriateness of Internal Audit resources. The review of the Audit Services Charter should ensure appropriateness of mission, accountability and scope of work for Internal Audit.

The Committee will also review audit reports issued by Internal Audit, management's response and subsequent follow-up of identified weaknesses. The review of audit reports will include:

a) identification of significant risk exposures;
b) assessment of the adequacy of the Corporation's internal controls, and
c) recommendations for the improvements of the Corporation's internal controls.

In order to focus on key risk areas, the Committee will only review the full audit report for reports identified as high risk by Internal Audit. However, executive summaries will be reviewed for all reports issued and the Committee will be provided with low and medium risk internal audit reports upon request.

The Committee Chair will meet privately with the Director, Internal Audit in advance of each Committee meeting to discuss all items to be presented.

In accordance with the Procedures for Confidential Reporting of Financial Concerns (an attachment to the *Director and Employee Code of Conduct)*, Internal Audit will provide quarterly reports to the Committee and to the Code of Conduct Advisor.

Other Responsibilities

The Committee will:

a) review the status of pending or threatened material litigation and confirm with management whether there has been any reported evidence of a material violation of any laws or breach of fiduciary duty or similar violation that may not have reached the litigation stage;
b) ascertain whether the Corporation's financial results and condition satisfy the criteria for lenders, material agreements, applicable laws and insurers;
c) before public disclosure, review any formal financial reports on the condition or results of the Corporation including the Annual Report;

d) annually review a listing of all expenditures incurred by the Corporation with external audit firms, other than those fees related to BC Hydro's own External Auditors which will be reported as previously described;
e) draw to the attention of the Board of Directors all financial matters of which the Committee has knowledge and which may materially affect the current or future financial position of the Corporation;
f) confirm that appropriate policies and procedures are in place for monitoring compliance with legislation, applicable laws, business and industry practices and ascertain their adequacy and the levels of compliance;
g) receive reports on the status of any investigations underway pertaining to fraud, illegal acts or other compliance issues;
h) review and recommend the annual Service Plan to the Board of Directors for approval;
i) review and recommend the Five Year Forecast to the Board of Directors for approval;
j) annually review executive management and Board of Director expense reporting,
k) review and approve the hiring policies of the Corporation regarding any partners and employees, and former partners and employees of the present and former External Auditors of the Corporation, and
l) review such other matters that the Committee or the Board of Directors deems advisable or timely.
m) the Committee shall review and reassess the terms of reference at least annually.

Pension Plans

The Committee will:

a) establish and review membership, procedures and Terms of Reference for the corporate Pension Management Committee (PMC);
b) review with management the annual pension report and financial statements of the Corporation's pension plans including the actuarial valuation, Plan funded status, asset/liability forecast, asset allocation, manager performance and Plan operating costs;
c) review and recommend to the Board of Directors any proposed changes to accounting and investment policies of the pension plans;
d) adopt, and revise from time to time, a Funding Policy for the British Columbia Hydro and Power Authority Pension Plan;
e) approve the actuarial methods and assumptions used for funding valuations of the BC Hydro Pension Plans and approve BC Hydro's contributions to the BC Hydro Pension Plans;
f) review and recommend to the Board of Directors the termination of investment managers;

g) review the appointment and termination, for the BC Hydro pension plans, of actuaries, fund holders, advisors, administrators, External Auditors, investment managers; and performance measurement services;
h) review and recommend changes to the Board of Directors with respect to the design and benefit levels of the pension plans; and
i) at the request of the Board of Directors, and as appropriate, delegate to the PMC such other tasks relating to the operation of the pension plans that may be required from time to time.

Risk Management

The Audit and Risk Management Committee reviews the management of principal risks not identified as the responsibility of other Committees of the Board of Directors. This Committee is the lead Committee for ensuring systems are in place to identify, manage, and monitor principal risks. Through its review of reports from the corporate Risk Management Committee, corporate Pension Management Committee and other areas of the Corporation, the Audit and Risk Management Committee will assess the appropriateness and consistent application of systems to manage principal risks within the Corporation and ensure that key matters of risk are brought forward for action by the Board and management.

The Corporate Governance and Human Resources Committees of the Board of Directors take responsibility for monitoring risks directly related to their respective mandates.

The Chief Executive Officer and Chief Financial Officer of the Corporation, with advice from the Chief Risk Officer and the corporate Risk Management Committee ("RMC") are responsible for establishing processes, procedures and mechanisms by which key matters of risk are identified, and ensuring that strategies are developed to manage such risks.

The Committee will receive quarterly reports from the RMC, and from other areas of the Corporation as considered appropriate or timely by the Committee or by the Board of Directors.

In particular, the Committee will review with management to determine whether policies and procedures are in place to identify, manage and monitor material risk including, but not limited to:

a) interest rates, foreign exchange, debt, credit and commodity prices and hydro inflows;
b) risks of low probability and high impact events and disaster preparedness;
c) environmental policies and practices including the sufficiency of the Corporation's environmental management system;
d) security of electricity supply including asset risk;
e) aboriginal negotiations and major consultations;
f) directors' and officers' liabilities, as well as processes to mitigate them, including indemnification and insurance as appropriate;
g) insurance management strategies;
h) information technology strategies, and
i) such other risk issues of concern to the Committee, the Board of Directors and management.

Accountability

The Committee will report its discussions to the Board of Directors by distributing the minutes of its meetings, and where appropriate, by oral report to the Board of Directors with respect to every major matter considered since the last meeting.

Committee Timetable

The timetable below outlines the Committee's schedule of activities during the year.

COMMITTEE TIMETABLE

	Q1	Q2	Q3	Q4
Review and recommend Board approval of the Audited Financial Statements	✓			
Review and recommend Board approval of quarterly financial reports		✓	✓	✓
Review External Auditor independence and quality control procedures		✓		
Recommend appointment of External Auditors to Board, monitor performance and determine whether External Auditors are satisfactory		✓		
Review the terms of the External Auditors' engagement, proposed audit fees and the experience and qualifications of senior audit personnel		✓		
Annually approve audit/non-audit pre-approval policy and receive quarterly summaries of pre-approvals by Chair (in-camera)	*Policy Approval*	✓	✓	✓
Review audit plan with External Auditors, ascertaining whether management has provided full and open disclosure		✓		
Through communication with management, Internal Auditors and External Auditors, obtain assurance that accounting systems are reliable, and internal controls adequate	✓	✓	✓	✓
Review annual Internal Audit Plan		✓		
Review Internal Audit reports, management reponse and any subsequent follow-up	✓	✓	✓	✓
Ascertain that financial results satisfy criteria for lenders, material agreements, applicable laws and insurers, and review before public disclosure	✓	✓	✓	✓
Receive quarterly summary of any reporting of financial concerns to the Code of Conduct Advisor	✓	✓	✓	✓
Review and recommend approval of the annual Service Plan to the Board				✓
Review and recommend Five Year Forecast to the Board of Directors for approval;	✓	✓	✓	✓
Review executive expense reporting.	✓	✓	✓	✓
Receive annual and quarterly standing reports from the corporate Pension Management Committee, approve changes to Committee membership, its terms of reference and to the British Columbia Hydro and Power Authority Pension Plan Funding Policy as required	**Annual**	✓	✓	✓

COMMITTEE TIMETABLE

	Q1	Q2	Q3	Q4
Make recommendations to the Board respecting pension plan design, benefit levels and investment performance etc. and: • review Pension Plan Audited Statements • review Statement of Investment Policies • approve actuarial methods and assumptions • approve BC Hydro's contributions to the Pension plans • receive actuarial valuation of Plan on a tri-annual basis • Receive pension fund asset allocation review, and make recommendations to Board (every 3-5 years)	✓			
Receive standing report from corporate Risk Management Committee	✓	✓	✓	✓
Review Environmental Policies & Practices	✓	✓	✓	✓
Review Information Technology Strategies				✓
Review Insurance Management Strategies		✓		✓
Review status of pending/threatened litigation	✓	✓	✓	✓
Review External Reporting of Financial Information				✓

TERMS OF REFERENCE FOR THE AUDIT AND RISK MANAGEMENT COMMITTEE

Purpose

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The purpose of the Audit and Risk Management Committee (the "Committee") is to assist the Board of Directors in fulfilling its obligations and oversight responsibilities relating to the audit process, financial reporting, the system of corporate controls, governance of the Corporation's pension plans, internal audit functions, risk management, and legal and environmental compliance programs and when required, make recommendations to the full Board of Directors for approval.

In the process of overseeing the Corporation's audit procedures, the Committee will have unrestricted access to the Corporation's personnel and documents, and will be provided with the resources necessary to carry out its responsibilities, including the authority to engage independent counsel and other advisers as part of this resource requirement.

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Composition

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The Corporate Secretary will be secretary to the Committee.

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Financial Reporting

Annual Financial Statements

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a) determining whether appropriate accounting methods are being applied;
b) discussing with management and with the External Auditors:
   - all proposed changes in accounting policy,
   - the import and presentation of all large risks or uncertainties,
   - compliance with accounting standards,
   - significant adjustments arising out of the audit process,
   - related party transactions, and discuss with management the business rationale for the transactions and whether appropriate disclosures have been made,
   - major issues as to the adequacy of the Corporation's internal control over financial reporting and any specific remedial actions adopted in light of significant deficiencies or material weaknesses,
   - consideration of the effect of regulatory and accounting initiatives, as well as off-balance sheet structures, on the financial statements,
   - consideration of the judgment of both management and the external auditors about the quality, not just the acceptability of accounting principles, and
   - the clarity of the disclosures in the financial statements,
   - all estimates or judgements of management that may be material to financial reporting;
c) discussing with management and the External Auditors significant financial reporting, recording or presentation issues discussed during the fiscal period and the manner of their resolution, and
d) examining the consolidated audited annual financial statements in conjunction with the report of the External Auditors, which may include determining whether the statements:
   - properly reflect the significant accounting policies selected,
   - reflect estimates and other financial statement elements that are reasonable and consistent,
   - adequately disclose all major transactions and issues,
   - disclose all post-year-end significant events, and
   - are understandable, relevant, reliable and comparable.

Quarterly Financial Reports

The Committee will review quarterly financial reports and related information and recommend their approval or disapproval to the Board of Directors. The Board of Directors has delegated approving authority of the quarterly financial report to the Committee, in the event the Board meeting schedule proves untimely.

The quarterly financial reports are required to be reviewed by the External Auditors prior to their submission to the Committee, the results of which are discussed with the Committee.

External Audit

The Committee shall have the direct responsibility for the appointment, compensation, retention and oversight of the External Auditors (including nominating the External Auditors to be proposed for Board approval). The Committee shall serve as the ultimate authority to which the Corporation's External Auditors are accountable. The Corporation shall provide appropriate funding, as determined by the Committee, for payment of compensation to the External Auditors and any experts or advisors employed by the Committee.

The Committee shall meet with the External Auditors, as the Committee may deem appropriate, to consider any matter which the Committee or External Auditors believe should be brought to the attention of the Board or the Shareholder.

The Committee will oversee the external audit process, including:

a) determining whether the performance of the external audit is satisfactory, effective and meets the requirements of the Corporation;
b) reviewing all issues related to any proposed change in External Auditors and the planned steps for an orderly transition;
c) reviewing the terms of the External Auditors' engagement, and the appropriateness and reasonableness of the proposed audit fees;
d) review on a quarterly basis the amount of fees paid to the External Auditors and their affiliates for audit related and non-audit consulting services provided to the Corporation and its subsidiaries in accordance with best practices at public corporations;
e) at the request of management, pre-approve fee levels for audit related and non-audit related services provided to the Corporation by its External Auditors. The Committee has delegated such pre-approval to the Committee Chair on its behalf and requested management to report to the Committee on a quarterly basis;
f) reviewing the audit plan with the External Auditors and management;
g) determining whether management has provided full and open disclosure to the External Auditors' inquiries;
h) reviewing problems experienced by the External Auditors in performing the audit, including any restriction imposed by management and all significant accounting issues on which there was a disagreement with management;
i) reviewing the post-audit or management letter containing the recommendations of the External Auditors and reviewing management's response and subsequent follow-up to any significant identified weaknesses.
j) review and discuss with the External Auditors all relationships that the External Auditors and their affiliates have with the Corporation and its affiliates in order to determine the External Auditors' independence, including, without limitation (i) requesting, receiving and reviewing, on a periodic basis, a formal written statement from the External Auditors delineating all relationships that may reasonably be thought to bear on the independence of the External Auditors with respect to the Corporation (ii) discussing with the External Auditors any disclosed relationships or services that the External Auditors believe may affect the objectivity and independence of the External Auditors, and (iii) recommending that the Board take appropriate action in response to the External Auditors' report to satisfy itself of the External Auditors' independence;

k) at least annually, obtain and review a report by the External Auditors describing the auditing firm's internal quality-control procedures, any material issues raised by the most recent internal quality-control review or peer review of the auditing firm or by any inquiry or investigation by government or professional authorities within the preceding five years respecting one or more independent audits carried out by the External Auditors and any steps taken to deal with any such issues and all relationships between the External Auditors and the Corporation;

l) After reviewing the foregoing report and the External Auditors' work throughout the year, the Committee shall evaluate the External Auditors' qualifications, performance and independence. Such evaluation should include the review and evaluation of the lead audit partner and take into account the opinions of management and the Corporation's personnel responsible for the internal audit function.

Accounting System and Internal Controls

Through discussions with management and the External and Internal Auditors, the Committee will obtain reasonable assurance that the Corporation's accounting systems are reliable and internal controls are adequate. For this purpose, the Committee may wish to direct the Auditors' examinations to particular areas and may request the Auditors to undertake special examinations.

The Committee will review the evaluation of internal controls by the External Auditors, including any recommendations for improvement of the Corporation's accounting procedures and internal controls, together with management's response.

Internal Audit

The Committee will annually review the Internal Audit Plan and the Audit Services Charter.

The review of the Internal Audit Plan should include an examination of the key risks identified for the organization and the appropriateness of Internal Audit resources. The review of the Audit Services Charter should ensure appropriateness of mission, accountability and scope of work for Internal Audit.

The Committee will also review audit reports issued by Internal Audit, management's response and subsequent follow-up of identified weaknesses. The review of audit reports will include:

a) identification of significant risk exposures;
b) assessment of the adequacy of the Corporation's internal controls, and
c) recommendations for the improvements of the Corporation's internal controls.

In order to focus on key risk areas, the Committee will only review the full audit report for reports identified as high risk by Internal Audit. However, executive summaries will be reviewed for all reports issued and the Committee will be provided with low and medium risk internal audit reports upon request.

The Committee Chair will meet privately with the Director, Internal Audit in advance of each Committee meeting to discuss all items to be presented.

In accordance with the Procedures for Confidential Reporting of Financial Concerns (an attachment to the *Director and Employee Code of Conduct)*, Internal Audit will provide quarterly reports to the Committee and to the Code of Conduct Advisor.

Other Responsibilities

The Committee will:

a) review the status of pending or threatened material litigation and confirm with management whether there has been any reported evidence of a material violation of any laws or breach of fiduciary duty or similar violation that may not have reached the litigation stage;
b) ascertain whether the Corporation's financial results and condition satisfy the criteria for lenders, material agreements, applicable laws and insurers;
c) before public disclosure, review any formal financial reports on the condition or results of the Corporation including the Annual Report;
d) annually review a listing of all expenditures incurred by the Corporation with external audit firms, other than those fees related to BC Hydro's own External Auditors which will be reported as previously described;
e) draw to the attention of the Board of Directors all financial matters of which the Committee has knowledge and which may materially affect the current or future financial position of the Corporation;
f) confirm that appropriate policies and procedures are in place for monitoring compliance with legislation, applicable laws, business and industry practices and ascertain their adequacy and the levels of compliance;
g) receive reports on the status of any investigations underway pertaining to fraud, illegal acts or other compliance issues;
h) review and recommend the annual Service Plan to the Board of Directors for approval;
i) review and recommend the Five Year Forecast to the Board of Directors for approval;
j) annually review executive management and Board of Director expense reporting,
k) review and approve the hiring policies of the Corporation regarding any partners and employees, and former partners and employees of the present and former External Auditors of the Corporation;
l) review such other matters that the Committee or the Board of Directors deems advisable or timely; and
m) the Committee shall review and reassess the terms of reference at least annually.

Pension Plans

The Committee will:

a) establish and review membership, procedures and Terms of Reference for the corporate Pension Management Committee (PMC);
b) review with management the annual pension report and financial statements of the Corporation's pension plans including the actuarial valuation, Plan funded status, asset/liability forecast, asset allocation, manager performance and Plan operating costs;
c) review and recommend to the Board of Directors any proposed changes to accounting and investment policies of the pension plans;
d) adopt, and revise from time to time, a Funding Policy for the British Columbia Hydro and Power Authority Pension Plan;
e) approve the actuarial methods and assumptions used for funding valuations of the BC Hydro Pension Plans and approve BC Hydro's contributions to the BC Hydro Pension Plans;
f) review and recommend to the Board of Directors the termination of investment managers;

g) review the appointment and termination, for the BC Hydro pension plans, of actuaries, fund holders, advisors, administrators, External Auditors, investment managers; and performance measurement services;
h) review and recommend changes to the Board of Directors with respect to the design and benefit levels of the pension plans; and
i) at the request of the Board of Directors, and as appropriate, delegate to the PMC such other tasks relating to the operation of the pension plans that may be required from time to time.

Risk Management

The Audit and Risk Management Committee reviews the management of principal risks not identified as the responsibility of other Committees of the Board of Directors. This Committee is the lead Committee for ensuring systems are in place to identify, manage, and monitor principal risks. Through its review of reports from the corporate Risk Management Committee, corporate Pension Management Committee and other areas of the Corporation, the Audit and Risk Management Committee will assess the appropriateness and consistent application of systems to manage principal risks within the Corporation and ensure that key matters of risk are brought forward for action by the Board and management.

The Corporate Governance and Human Resources Committees of the Board of Directors take responsibility for monitoring risks directly related to their respective mandates.

The Chief Executive Officer and Chief Financial Officer of the Corporation, with advice from the Chief Risk Officer and the corporate Risk Management Committee ("RMC") are responsible for establishing processes, procedures and mechanisms by which key matters of risk are identified, and ensuring that strategies are developed to manage such risks.

The Committee will receive quarterly reports from the RMC, and from other areas of the Corporation as considered appropriate or timely by the Committee or by the Board of Directors.

In particular, the Committee will review with management to determine whether policies and procedures are in place to identify, manage and monitor material risk including, but not limited to:

a) interest rates, foreign exchange, debt, credit and commodity prices and hydro inflows;
b) risks of low probability and high impact events and disaster preparedness;
c) environmental policies and practices including the sufficiency of the Corporation's environmental management system;
d) security of electricity supply including asset risk;
e) aboriginal negotiations and major consultations;
f) directors' and officers' liabilities, as well as processes to mitigate them, including indemnification and insurance as appropriate;
g) insurance management strategies;
h) information technology strategies, and
i) such other risk issues of concern to the Committee, the Board of Directors and management.

Accountability

The Committee will report its discussions to the Board of Directors by distributing the minutes of its meetings, and where appropriate, by oral report to the Board of Directors with respect to every major matter considered since the last meeting.

Committee Timetable

The timetable below outlines the Committee's schedule of activities during the year.

COMMITTEE TIMETABLE

	Q1	Q2	Q3	Q4
Review and recommend Board approval of the Audited Financial Statements	✓			
Review and recommend Board approval of quarterly financial reports		✓	✓	✓
Review External Auditor independence and quality control procedures		✓		
Recommend appointment of External Auditors to Board, monitor performance and determine whether External Auditors are satisfactory		✓		
Review the terms of the External Auditors' engagement, proposed audit fees and the experience and qualifications of senior audit personnel		✓		
Annually approve audit/non-audit pre-approval policy and receive quarterly summaries of pre-approvals by Chair (in-camera)	*Policy Approval*	✓	✓	✓
Review audit plan with External Auditors, ascertaining whether management has provided full and open disclosure		✓		
Through communication with management, Internal Auditors and External Auditors, obtain assurance that accounting systems are reliable, and internal controls adequate	✓	✓	✓	✓
Review annual Internal Audit Plan		✓		
Review Internal Audit reports, management reponse and any subsequent follow-up	✓	✓	✓	✓
Ascertain that financial results satisfy criteria for lenders, material agreements, applicable laws and insurers, and review before public disclosure	✓	✓	✓	✓
Receive quarterly summary of any reporting of financial concerns to the Code of Conduct Advisor	✓	✓	✓	✓
Review and recommend approval of the annual Service Plan to the Board				✓
Review and recommend Five Year Forecast to the Board of Directors for approval;	✓	✓	✓	✓
Review executive expense reporting.			✓	
Receive annual and quarterly standing reports from the corporate Pension Management Committee, approve changes to Committee membership, its terms of reference and to the British Columbia Hydro and Power Authority Pension Plan Funding Policy as required	**Annual**	✓	✓	✓

COMMITTEE TIMETABLE

	Q1	Q2	Q3	Q4
Make recommendations to the Board respecting pension plan design, benefit levels and investment performance etc. and: • review Pension Plan Audited Statements • review Statement of Investment Policies • approve actuarial methods and assumptions • approve BC Hydro's contributions to the Pension plans • receive actuarial valuation of Plan on a tri-annual basis • Receive pension fund asset allocation review, and make recommendations to Board (every 3-5 years)	✓			
Receive standing report from corporate Risk Management Committee	✓	✓	✓	✓
Review Environmental Policies & Practices	✓	✓	✓	✓
Review Information Technology & Telecommunication Strategies	✓	✓	✓	✓
Review Insurance Management Strategies		✓		✓
Review status of pending/threatened litigation	✓	✓	✓	✓
Review External Reporting of Financial Information				✓

TERMS OF REFERENCE FOR THE AUDIT AND RISK MANAGEMENT COMMITTEE

Purpose

Primary responsibility for the Corporation's financial reporting, accounting systems, risk management, management plans and budgets, internal controls and treasury is vested in management and overseen by the Board of Directors.

The purpose of the Audit and Risk Management Committee (the "Committee") is to assist the Board of Directors in fulfilling its obligations and oversight responsibilities relating to the audit process, financial reporting, the system of corporate controls, governance of the Corporation's pension plans, internal audit functions, risk management, and legal and environmental compliance programs and when required, make recommendations to the full Board of Directors for approval.

In the process of overseeing the Corporation's audit procedures, the Committee will have unrestricted access to the Corporation's personnel and documents, and will be provided with the resources necessary to carry out its responsibilities, including the authority to engage independent counsel and other advisers as part of this resource requirement.

In fulfilling its purpose, it is the responsibility of the Committee to maintain free and open communication between the Committee, the external auditors, the internal auditors, and management of the Corporation, and to determine that all parties are aware of their responsibilities.

The Board of Directors of BC Hydro's subsidiary, Powerex Corp., has appointed its own Audit and Risk Management Committee. That committee has its own terms of reference and reports directly to the Powerex Corp. Board of Directors.

Composition

The Committee will be composed of at least three independent Directors. Determination as to whether a particular Director satisfies the requirements for membership on the Committee shall be made by the full Board of Directors.

Committee members will have a working familiarity with finance and accounting practices, and at least one Committee member will have accounting or related financial management expertise.

The External Auditors will attend Committee meetings. The External Auditors will be notified of the Committee's meeting schedule and receive the appropriate meeting materials in advance of meetings.

The Corporate Secretary will be secretary to the Committee.

Duties and Responsibilities

The Committee, in carrying out its responsibilities, believes its policies and procedures should remain flexible, in order to best react to changing conditions and circumstances. The Committee will take appropriate actions to monitor the overall corporate 'tone' for quality financial reporting, sound business risk practices, and ethical behaviour.

Subject to the powers and duties of the Board, the Committee, which shall hold a minimum of four meetings per year, will perform the following duties:

Financial Reporting

Annual Financial Statements

The Committee will review the consolidated financial statements and Management Discussion and Analysis, and recommend their approval or disapproval to the Board of Directors. The Committee will provide an explanation if it cannot recommend approval. The review must include:

a) determining whether appropriate accounting methods are being applied;
b) discussing with management and with the External Auditors:
   - all proposed changes in accounting policy,
   - the import and presentation of all large risks or uncertainties,
   - compliance with accounting standards,
   - significant adjustments arising out of the audit process,
   - related party transactions, and discuss with management the business rationale for the transactions and whether appropriate disclosures have been made,
   - major issues as to the adequacy of the Corporation's internal control over financial reporting and any specific remedial actions adopted in light of significant deficiencies or material weaknesses,
   - consideration of the effect of regulatory and accounting initiatives, as well as off-balance sheet structures, on the financial statements,
   - consideration of the judgment of both management and the external auditors about the quality, not just the acceptability of accounting principles, and
   - the clarity of the disclosures in the financial statements,
   - all estimates or judgements of management that may be material to financial reporting;
c) discussing with management and the External Auditors significant financial reporting, recording or presentation issues discussed during the fiscal period and the manner of their resolution, and
d) examining the consolidated audited annual financial statements in conjunction with the report of the External Auditors, which may include determining whether the statements:
   - properly reflect the significant accounting policies selected,
   - reflect estimates and other financial statement elements that are reasonable and consistent,
   - adequately disclose all major transactions and issues,
   - disclose all post-year-end significant events, and
   - are understandable, relevant, reliable and comparable.

Quarterly Financial Reports

The Committee will review quarterly financial reports and related information and recommend their approval or disapproval to the Board of Directors. The Board of Directors has delegated approving authority of the quarterly financial report to the Committee, in the event the Board meeting schedule proves untimely.

The quarterly financial reports are required to be reviewed by the External Auditors prior to their submission to the Committee, the results of which are discussed with the Committee.

External Audit

The Committee shall have the direct responsibility for the appointment, compensation, retention and oversight of the External Auditors (including nominating the External Auditors to be proposed for Board approval). The Committee shall serve as the ultimate authority to which the Corporation's External Auditors are accountable. The Corporation shall provide appropriate funding, as determined by the Committee, for payment of compensation to the External Auditors and any experts or advisors employed by the Committee.

The Committee shall meet with the External Auditors, as the Committee may deem appropriate, to consider any matter which the Committee or External Auditors believe should be brought to the attention of the Board or the Shareholder.

The Committee will oversee the external audit process, including:

a) determining whether the performance of the external audit is satisfactory, effective and meets the requirements of the Corporation;
b) reviewing all issues related to any proposed change in External Auditors and the planned steps for an orderly transition;
c) reviewing the terms of the External Auditors' engagement, and the appropriateness and reasonableness of the proposed audit fees;
d) review on a quarterly basis the amount of fees paid to the External Auditors and their affiliates for audit related and non-audit consulting services provided to the Corporation and its subsidiaries in accordance with best practices at public corporations;
e) at the request of management, pre-approve fee levels for audit related and non-audit related services provided to the Corporation by its External Auditors. The Committee has delegated such pre-approval to the Committee Chair on its behalf and requested management to report to the Committee on a quarterly basis;
f) reviewing the audit plan with the External Auditors and management;
g) determining whether management has provided full and open disclosure to the External Auditors' inquiries;
h) reviewing problems experienced by the External Auditors in performing the audit, including any restriction imposed by management and all significant accounting issues on which there was a disagreement with management;
i) reviewing the post-audit or management letter containing the recommendations of the External Auditors and reviewing management's response and subsequent follow-up to any significant identified weaknesses.
j) review and discuss with the External Auditors all relationships that the External Auditors and their affiliates have with the Corporation and its affiliates in order to determine the External Auditors' independence, including, without limitation (i) requesting, receiving and reviewing, on a periodic basis, a formal written statement from the External Auditors delineating all relationships that may reasonably be thought to bear on the independence of the External Auditors with respect to the Corporation (ii) discussing with the External Auditors any disclosed relationships or services that the External Auditors believe may affect the objectivity and independence of the External Auditors, and (iii) recommending that the Board take appropriate action in response to the External Auditors' report to satisfy itself of the External Auditors' independence;

k) at least annually, obtain and review a report by the External Auditors describing the auditing firm's internal quality-control procedures, any material issues raised by the most recent internal quality-control review or peer review of the auditing firm or by any inquiry or investigation by government or professional authorities within the preceding five years respecting one or more independent audits carried out by the External Auditors and any steps taken to deal with any such issues and all relationships between the External Auditors and the Corporation;

l) After reviewing the foregoing report and the External Auditors' work throughout the year, the Committee shall evaluate the External Auditors' qualifications, performance and independence. Such evaluation should include the review and evaluation of the lead audit partner and take into account the opinions of management and the Corporation's personnel responsible for the internal audit function.

Accounting System and Internal Controls

Through discussions with management and the External and Internal Auditors, the Committee will obtain reasonable assurance that the Corporation's accounting systems are reliable and internal controls are adequate. For this purpose, the Committee may wish to direct the Auditors' examinations to particular areas and may request the Auditors to undertake special examinations.

The Committee will review the evaluation of internal controls by the External Auditors, including any recommendations for improvement of the Corporation's accounting procedures and internal controls, together with management's response.

Internal Audit

The Committee will annually review the Internal Audit Plan and the Audit Services Charter.

The review of the Internal Audit Plan should include an examination of the key risks identified for the organization and the appropriateness of Internal Audit resources. The review of the Audit Services Charter should ensure appropriateness of mission, accountability and scope of work for Internal Audit.

The Committee will also review audit reports issued by Internal Audit, management's response and subsequent follow-up of identified weaknesses. The review of audit reports will include:

a) identification of significant risk exposures;
b) assessment of the adequacy of the Corporation's internal controls, and
c) recommendations for the improvements of the Corporation's internal controls.

In order to focus on key risk areas, the Committee will only review the full audit report for reports identified as high risk by Internal Audit. However, executive summaries will be reviewed for all reports issued and the Committee will be provided with low and medium risk internal audit reports upon request.

The Committee Chair will meet privately with the Director, Internal Audit in advance of each Committee meeting to discuss all items to be presented.

In accordance with the Procedures for Confidential Reporting of Financial Concerns (an attachment to the *Director and Employee Code of Conduct)*, Internal Audit will provide quarterly reports to the Committee and to the Code of Conduct Advisor.

Other Responsibilities

The Committee will:

a) review the status of pending or threatened material litigation and confirm with management whether there has been any reported evidence of a material violation of any laws or breach of fiduciary duty or similar violation that may not have reached the litigation stage;
b) ascertain whether the Corporation's financial results and condition satisfy the criteria for lenders, material agreements, applicable laws and insurers;
c) before public disclosure, review any formal financial reports on the condition or results of the Corporation including the Annual Report;
d) annually review a listing of all expenditures incurred by the Corporation with external audit firms, other than those fees related to BC Hydro's own External Auditors which will be reported as previously described;
e) draw to the attention of the Board of Directors all financial matters of which the Committee has knowledge and which may materially affect the current or future financial position of the Corporation;
f) confirm that appropriate policies and procedures are in place for monitoring compliance with legislation, applicable laws, business and industry practices and ascertain their adequacy and the levels of compliance;
g) receive reports on the status of any investigations underway pertaining to fraud, illegal acts or other compliance issues;
h) review and recommend the annual Service Plan to the Board of Directors for approval;
i) review and recommend the Five Year Forecast to the Board of Directors for approval;
j) annually review executive management and Board of Director expense reporting,
k) review and approve the hiring policies of the Corporation regarding any partners and employees, and former partners and employees of the present and former External Auditors of the Corporation;
l) approve and authorize the Corporation's general banking arrangements including terminating or altering routine banking matters for the benefit of the Corporation or its subsidiaries;
m) review such other matters that the Committee or the Board of Directors deems advisable or timely; and
n) the Committee shall review and reassess the terms of reference at least annually.

Pension Plans

The Committee will:

a) establish and review membership, procedures and Terms of Reference for the corporate Pension Management Committee (PMC);
b) review with management the annual pension report and financial statements of the Corporation's pension plans including the actuarial valuation, Plan funded status, asset/liability forecast, asset allocation, manager performance and Plan operating costs;
c) review and recommend to the Board of Directors any proposed changes to accounting and investment policies of the pension plans;
d) adopt, and revise from time to time, a Funding Policy for the British Columbia Hydro and Power Authority Pension Plan;
e) approve the actuarial methods and assumptions used for funding valuations of the BC Hydro Pension Plans and approve BC Hydro's contributions to the BC Hydro Pension Plans;

f) review and recommend to the Board of Directors the termination of investment managers;
g) review the appointment and termination, for the BC Hydro pension plans, of actuaries, fund holders, advisors, administrators, External Auditors, investment managers; and performance measurement services;
h) review and recommend changes to the Board of Directors with respect to the design and benefit levels of the pension plans; and
i) at the request of the Board of Directors, and as appropriate, delegate to the PMC such other tasks relating to the operation of the pension plans that may be required from time to time.

Risk Management

The Audit and Risk Management Committee reviews the management of principal risks not identified as the responsibility of other Committees of the Board of Directors. This Committee is the lead Committee for ensuring systems are in place to identify, manage, and monitor principal risks. Through its review of reports from the corporate Risk Management Committee, corporate Pension Management Committee and other areas of the Corporation, the Audit and Risk Management Committee will assess the appropriateness and consistent application of systems to manage principal risks within the Corporation and ensure that key matters of risk are brought forward for action by the Board and management.

The Corporate Governance and Human Resources Committees of the Board of Directors take responsibility for monitoring risks directly related to their respective mandates.

The Chief Executive Officer and Chief Financial Officer of the Corporation, with advice from the Chief Risk Officer and the corporate Risk Management Committee ("RMC") are responsible for establishing processes, procedures and mechanisms by which key matters of risk are identified, and ensuring that strategies are developed to manage such risks.

The Committee will receive quarterly reports from the RMC, and from other areas of the Corporation as considered appropriate or timely by the Committee or by the Board of Directors.

In particular, the Committee will review with management to determine whether policies and procedures are in place to identify, manage and monitor material risk including, but not limited to:

a) interest rates, foreign exchange, debt, credit and commodity prices and hydro inflows;
b) risks of low probability and high impact events and disaster preparedness;
c) environmental policies and practices including the sufficiency of the Corporation's environmental management system;
d) security of electricity supply including asset risk;
e) aboriginal negotiations and major consultations;
f) directors' and officers' liabilities, as well as processes to mitigate them, including indemnification and insurance as appropriate;
g) insurance management strategies;
h) information technology strategies, and
i) such other risk issues of concern to the Committee, the Board of Directors and management.

Accountability

The Committee will report its discussions to the Board of Directors by distributing the minutes of its meetings, and where appropriate, by oral report to the Board of Directors with respect to every major matter considered since the last meeting.

Committee Timetable

The timetable below outlines the Committee's schedule of activities during the year.

COMMITTEE TIMETABLE

	Q1	Q2	Q3	Q4
Review and recommend Board approval of the Audited Financial Statements	✓			
Review and recommend Board approval of quarterly financial reports		✓	✓	✓
Review External Auditor independence and quality control procedures	✓			
Recommend appointment of External Auditors to Board, monitor performance and determine whether External Auditors are satisfactory		✓		
Review the terms of the External Auditors' engagement, proposed audit fees and the experience and qualifications of senior audit personnel		✓		
Annually approve audit/non-audit pre-approval policy and receive quarterly summaries of pre-approvals by Chair (in-camera)	*Policy Approval*	✓	✓	✓
Review audit plan with External Auditors, ascertaining whether management has provided full and open disclosure		✓		
Through communication with management, Internal Auditors and External Auditors, obtain assurance that accounting systems are reliable, and internal controls adequate	✓	✓	✓	✓
Review annual Internal Audit Plan		✓		
Review Internal Audit reports, management reponse and any subsequent follow-up	✓	✓	✓	✓
Ascertain that financial results satisfy criteria for lenders, material agreements, applicable laws and insurers, and review before public disclosure	✓	✓	✓	✓
Receive quarterly summary of any reporting of financial concerns to the Code of Conduct Advisor	✓	✓	✓	✓
Review and recommend approval of the annual Service Plan to the Board				✓
Review and recommend Five Year Forecast to the Board of Directors for approval;	✓	✓	✓	✓
Review executive expense reporting.			✓	
Receive annual and quarterly standing reports from the corporate Pension Management Committee, approve changes to Committee membership, its terms of reference and to the British Columbia Hydro and Power Authority Pension Plan Funding Policy as required	**Annual**	✓	✓	✓

COMMITTEE TIMETABLE

	Q1	Q2	Q3	Q4
Make recommendations to the Board respecting pension plan design, benefit levels and investment performance etc. and: • review Pension Plan Audited Statements • review Statement of Investment Policies • approve actuarial methods and assumptions • approve BC Hydro's contributions to the Pension plans • receive actuarial valuation of Plan on a tri-annual basis • Receive pension fund asset allocation review, and make recommendations to Board (every 3-5 years)	✓			
Receive standing report from corporate Risk Management Committee	✓	✓	✓	✓
Review Environmental Policies & Practices	✓	✓	✓	✓
Review Information Technology & Telecommunication Strategies	✓	✓	✓	✓
Review Insurance Management Strategies		✓		✓
Review status of pending/threatened litigation	✓	✓	✓	✓
Review External Reporting of Financial Information				✓
Review, revise and authorize routing banking arrangements and relationships	***As required***	***As required***	***As required***	***As required***

TERMS OF REFERENCE FOR THE AUDIT AND RISK MANAGEMENT COMMITTEE

Purpose

Primary responsibility for the Corporation's financial reporting, accounting systems, risk management, management plans and budgets, internal controls and treasury is vested in management and overseen by the Board of Directors.

The purpose of the Audit and Risk Management Committee (the "Committee") is to assist the Board of Directors in fulfilling its obligations and oversight responsibilities relating to the audit process, financial reporting, the system of corporate controls, governance of the Corporation's pension plans, internal audit functions, risk management, treasury and legal compliance programs and when required, make recommendations to the full Board of Directors for approval.

In the process of overseeing the Corporation's audit procedures, the Committee will have unrestricted access to the Corporation's personnel and documents, and will be provided with the resources necessary to carry out its responsibilities, including the authority to engage independent counsel and other advisers as part of this resource requirement.

In fulfilling its purpose, it is the responsibility of the Committee to maintain free and open communication between the Committee, the external auditors, the internal auditors, and management of the Corporation, and to determine that all parties are aware of their responsibilities.

The Board of Directors of BC Hydro's subsidiary, Powerex Corp., has appointed its own Audit and Risk Management Committee. That committee has its own terms of reference and reports directly to the Powerex Corp. Board of Directors.

Composition

The Committee will be composed of at least three independent Directors. Determination as to whether a particular Director satisfies the requirements for membership on the Committee shall be made by the full Board of Directors.

Committee members will have a working familiarity with finance, accounting and risk management practices, and at least one Committee member will have accounting or related financial management expertise.

The External Auditors will attend Committee meetings. The External Auditors will be notified of the Committee's meeting schedule and receive the appropriate meeting materials in advance of meetings.

The Corporate Secretary will be secretary to the Committee.

Duties and Responsibilities

The Committee, in carrying out its responsibilities, believes its policies and procedures should remain flexible, in order to best react to changing conditions and circumstances. The Committee will take appropriate actions to monitor the overall corporate 'tone' for quality financial reporting, sound business risk practices, and ethical behaviour.

Subject to the powers and duties of the Board, the Committee, which shall hold a minimum of four meetings per year, will perform the following duties:

Financial Reporting

Annual Financial Statements

The Committee will review the annual consolidated financial statements and Management Discussion and Analysis, and recommend their approval to the Board of Directors. The Committee will provide an explanation if it cannot recommend approval. The review must include:

a) determining whether appropriate accounting methods are being applied;
b) discussing with management and with the External Auditors:
   - all proposed changes in accounting policy,
   - the import and presentation of all large risks or uncertainties,
   - compliance with accounting standards,
   - significant adjustments arising out of the audit process,
   - related party transactions, and the business rationale for the transactions and whether appropriate disclosures have been made,
   - major issues as to the adequacy of the Corporation's internal control over financial reporting and any specific remedial actions adopted in light of significant deficiencies or material weaknesses,
   - consideration of the effect of regulatory and accounting initiatives, as well as off-balance sheet structures, on the financial statements,
   - all estimates or judgements of management that may be material to financial reporting.
   - consideration of the judgment of both management and the external auditors about the quality, not just the acceptability of accounting principles, and
   - the clarity of the disclosures in the financial statements;,
c) discussing with management and the External Auditors significant financial reporting, recording or presentation issues discussed during the fiscal period and the manner of their resolution; and
d) examining the consolidated audited annual financial statements in conjunction with the report of the External Auditors, which may include determining whether the statements:
   - properly reflect the significant accounting policies selected,
   - reflect estimates and other financial statement elements that are reasonable and consistent,
   - adequately disclose all major transactions and issues,
   - disclose all post-year-end significant events, and
   - are understandable, relevant, reliable and comparable.

Quarterly Financial Reports

The Committee will review quarterly financial reports and related information and recommend their approval to the Board of Directors. The Board of Directors has delegated approving authority of the quarterly financial report to the Committee, in the event the Board meeting schedule proves untimely.

The quarterly financial reports are required to be reviewed by the External Auditors prior to their submission to the Committee, the results of which are discussed with the Committee.

External Audit

The Committee shall have the direct responsibility for the appointment, compensation, retention and oversight of the External Auditors (including nominating the External Auditors to be proposed for Board approval). The Committee shall serve as the ultimate authority to which the Corporation's External Auditors are accountable. The Corporation shall provide appropriate funding, as determined by the Committee, for payment of compensation to the External Auditors and any experts or advisors employed by the Committee.

The Committee shall meet with the External Auditors, as the Committee may deem appropriate, to consider any matter which the Committee or External Auditors believe should be brought to the attention of the Board or the Shareholder.

The Committee will oversee the external audit process, including:

a) determining whether the performance of the external audit is satisfactory, effective and meets the requirements of the Corporation;
b) reviewing all issues related to any proposed change in External Auditors and the planned steps for an orderly transition;
c) reviewing the terms of the External Auditors' engagement, and the appropriateness and reasonableness of the proposed audit fees;
d) review on a quarterly basis the amount of fees paid to the External Auditors and their affiliates for audit related and non-audit consulting services provided to the Corporation and its subsidiaries in accordance with best practices at public corporations;
e) at the request of management, pre-approve fee levels for audit related and non-audit related services provided to the Corporation by its External Auditors as per the Pre-Approval of Services Provided by the External Auditor Procedure;
f) reviewing the audit plan with the External Auditors and management;
g) determining whether management has provided full and open disclosure to the External Auditors' inquiries;
h) reviewing problems experienced by the External Auditors in performing the audit, including any restriction imposed by management and all significant accounting issues on which there was a disagreement with management;
i) reviewing the post-audit management letter containing the recommendations of the External Auditors and reviewing management's response and subsequent follow-up to any significant identified weaknesses.
j) review and discuss with the External Auditors all relationships that the External Auditors and their affiliates have with the Corporation and its affiliates in order to determine the External Auditors' independence, including, without limitation (i) requesting, receiving and reviewing, on a periodic basis, a formal written statement from the External Auditors delineating all relationships that may reasonably be thought to bear on the independence of the External Auditors with respect to the Corporation (ii) discussing with the External Auditors any disclosed relationships or services that the External Auditors believe may affect the objectivity and independence of the External Auditors, and (iii) recommending that the Board take appropriate action in response to the External Auditors' report to satisfy itself of the External Auditors' independence;

k) at least annually, obtain and review a report by the External Auditors describing the auditing firm's internal quality-control procedures, any material issues raised by the most recent internal quality-control review or peer review of the auditing firm or by any inquiry or investigation by government or professional authorities within the preceding five years respecting one or more independent audits carried out by the External Auditors and any steps taken to deal with any such issues and all relationships between the External Auditors and the Corporation;

l) After reviewing the foregoing report and the External Auditors' work throughout the year, the Committee shall evaluate the External Auditors' qualifications, performance and independence. Such evaluation should include the review and evaluation of the lead audit partner and take into account the opinions of management and the Corporation's personnel responsible for the internal audit function.

Accounting System and Internal Controls

Through discussions with management and the External and Internal Auditors, the Committee will obtain reasonable assurance that the Corporation's accounting systems are reliable and internal controls are adequate. For this purpose, the Committee may wish to direct the Auditors' examinations to particular areas and may request the Auditors to undertake special examinations. The Committee will review the outcome of any such examinations by the External Auditors, including any recommendations for improvement of the Corporation's accounting procedures and internal controls, together with management's response.

Internal Audit

The Committee will annually review the Internal Audit Plan and the Audit Services Charter.

The review of the Internal Audit Plan should include an examination of the key risks identified for the organization and the appropriateness of Internal Audit resources. The review of the Audit Services Charter should ensure appropriateness of mission, accountability and scope of work for Internal Audit.

The Committee will also review audit reports issued by Internal Audit, management's response and subsequent follow-up of identified weaknesses. The review of audit reports will include:

a) identification of significant risk exposures and effectiveness of related risk management measures;
b) assessment of the adequacy of the Corporation's internal controls, and
c) recommendations for the improvements of the Corporation's internal controls and risk management.

In order to focus on key risk areas, the Committee will only review the full audit report for reports identified as high risk by Internal Audit. However, executive summaries will be reviewed for all reports issued and the Committee will be provided with low and medium risk internal audit reports upon request.

The Committee Chair will meet with the Director, Audit Services in advance of each quarterly Committee meeting to discuss all items to be presented. During quarterly Committee meetings, the Committee shall:

a) meet with the Director, Audit Services, without management present:
b) review, in consultation with senior management, the performance of the Audit Services department; and

c) review and approve, in consultation with senior management, proposed changes in the position of the Director, Audit Services.

In accordance with the Procedures for Confidential Reporting of Financial Concerns (an attachment to the *Director and Employee Code of Conduct)*, Internal Audit will provide quarterly reports to the Committee and to the Code of Conduct Advisor.

Other Responsibilities

The Committee will:

a) review the status of pending or threatened material litigation and confirm with management whether there has been any reported evidence of a material violation of any laws or breach of fiduciary duty or similar violation that may not have reached the litigation stage;
b) ascertain whether the Corporation's financial results and condition satisfy the criteria for lenders, material agreements, applicable laws and insurers;
c) before public disclosure, review any formal financial reports on the condition or results of the Corporation including the Annual Report;
d) annually review a listing of all expenditures incurred by the Corporation with external audit firms, other than those fees related to BC Hydro's own External Auditors which will be reported as previously described;
e) draw to the attention of the Board of Directors all financial matters of which the Committee has knowledge and which may materially affect the current or future financial position of the Corporation;
f) confirm that appropriate policies and procedures are in place for monitoring compliance with legislation, applicable laws, business and industry practices and ascertain their adequacy and the levels of compliance;
g) receive reports on the status of any investigations underway pertaining to fraud, illegal acts or other compliance issues;
h) review and recommend the annual Service Plan to the Board of Directors for approval;
i) review and recommend the annual Five Year Forecast to the Board of Directors for approval and do the same with quarterly updates thereto unless timing prevents such recommendations being received by the Board in which case the Committee shall have the delegated authority from the Board to make such approvals;
j) annually review executive management and Board of Director expense reporting,
k) review and approve the hiring policies of the Corporation regarding any partners and employees, and former partners and employees of the present and former External Auditors of the Corporation;
l) review Information Technology and Telecommunication strategies, with particular emphasis on any inherent risks as well as their risk mitigation opportunities;
m) review issues related to the Corporation's insurance program, including its insurance management strategies;
n) maintain a current and general understanding of system operations issues related to the Corporation's generation system, and associated risks;
o) approve and authorize the Corporation's general banking arrangements including terminating or altering routine banking matters for the benefit of the Corporation or its subsidiaries;
p) review such other matters that the committee or the Board of Directors deems advisable or timely; and
q) the Committee shall review and reassess the terms of reference at least annually

Pension Plans

The Committee will:

a) establish and review procedures and Terms of Reference for the corporate Pension Management Committee (PMC);
b) review with management the annual pension report and approve the financial statements of the Corporation's pension plans. Review with management the actuarial valuation, Plan funded status, asset/liability forecast, asset allocation, manager performance and Plan operating costs;
c) review and recommend to the Board of Directors any proposed changes to investment policies of the pension plans;
d) adopt, and revise from time to time, a Funding Policy for the British Columbia Hydro and Power Authority Pension Plan;
e) review the actuarial methods and assumptions for the funding valuations of BC Hydro's registered pension plan and BC Hydro's contributions to the BC Hydro registered pension plans, each as determined by the PMC;
f) review and recommend to the Board of Directors the termination of investment managers;
g) review the appointment and termination by the PMC of actuaries, fund holders, advisors, administrators, External Auditors, investment managers (appointment only); and performance measurement service providers;
h) review and recommend changes to the Board of Directors with respect to the design and benefit levels of the pension plans; and
i) at the request of the Board of Directors, and as appropriate, delegate to the PMC such other tasks relating to the operation of the pension plans that may be required from time to time.

Risk Management

The Committee reviews the management of principal risks not identified as the responsibility of other Committees of the Board of Directors. This Committee is the lead Committee for ensuring systems are in place to identify, manage, and monitor principal risks. Through its review of reports from the Chief Risk Officer, the corporate Pension Management Committee and other areas of the Corporation, the Committee will assess the appropriateness and consistent application of systems to manage principal risks within the Corporation and ensure that key matters of risk are brought forward for action by the Board and management.

The Corporate Governance and Human Resources and Safety Committees of the Board of Directors take responsibility for monitoring risks directly related to their respective mandates.

The Chief Executive Officer and Chief Financial Officer of the Corporation, with advice from the Chief Risk Officer and the corporate Risk Management Committee ("RMC") are responsible for establishing processes, procedures and mechanisms by which key matters of risk are identified, and ensuring that strategies are developed to manage such risks.

The Committee will receive quarterly reports from the Chief Risk Officer, and from other areas of the Corporation as considered appropriate or timely by the Committee or by the Board of Directors.

In particular, the Committee will review with management to determine whether policies and procedures are in place to identify, manage and monitor material risk including, but not limited to:

a) interest rates, foreign exchange, debt, credit and commodity prices and hydro inflows;
b) risks of low probability and high impact events and disaster preparedness;
c) environmental policies and practices including the sufficiency of the Corporation's environmental management system;
d) security of electricity supply including asset risk;
e) aboriginal negotiations and major consultations;
f) directors' and officers' liabilities, as well as processes to mitigate them, including indemnification and insurance as appropriate;
g) insurance management strategies;
h) information technology strategies, and
i) such other risk issues of concern to the Committee, the Board of Directors and management.

Accountability

The Committee will report its discussions to the Board of Directors by distributing the minutes of its meetings, and where appropriate, by oral report to the Board of Directors with respect to every major matter considered since the last meeting.

Committee Timetable

The timetable below outlines the Committee's schedule of activities during the year.

COMMITTEE TIMETABLE

	Q1	Q2	Q3	Q4
Review and recommend Board approval of the Audited Financial Statements	✓			
Review and recommend Board approval of quarterly financial reports		✓	✓	✓
Review External Auditor independence and quality control procedures	✓			
Recommend appointment of External Auditors to Board	✓			
During the term of the external auditors engagement, review the proposed audit fees and the experience, review the qualifications of senior audit personnel, assess the external auditors overall performance, and approve the annual renewal of the terms of the External Auditors' engagement	✓			
Annually approve, in advance, audit/non-audit services to be provided by the External Auditor and receive quarterly summaries of such services and related expenditures (in-camera)	*Approval*	✓	✓	✓
Review audit plan with External Auditors and assess the relationship between the External Auditors and management			✓	
Review post-audit management letter prepared by the External Auditors		✓		
Through communication with management, Internal Auditors and External Auditors, obtain assurance that accounting systems are reliable, and internal controls adequate	✓	✓	✓	✓
Review annual Internal Audit Plan	✓			
Review Internal Audit reports, management's reponses and any subsequent follow-up	✓	✓	✓	✓
Ascertain that financial results satisfy criteria for lenders, material agreements, applicable laws and insurers, and review before public disclosure	***As required***	***As required***	***As required***	***As required***
Receive quarterly summary of any reporting of financial concerns to the Code of Conduct Advisor	✓	✓	✓	✓
Review and recommend approval of the annual Service Plan to the Board				✓
Review and recommend Five Year Forecast to the Board of Directors for approval	✓	✓	✓	✓
Review executive expense reporting			✓	
Receive annual and quarterly standing reports from the corporate Pension Management Committee, approve changes to Committee membership, its terms of reference and to the British Columbia Hydro and Power Authority Pension Plan Funding Policy as required	**Annual**	✓	✓	✓

COMMITTEE TIMETABLE

	Q1	Q2	Q3	Q4
Make recommendations to the Board respecting pension plan design, benefit levels and investment policies etc. and: • approve Pension Plan Audited Statements • review actuarial methods and assumptions • review BC Hydro's contributions to the Pension plans • review actuarial valuation of Plan on a tri-annual basis • Receive pension fund asset allocation review, and make recommendations to Board (every 3-5 years)	✓			
Receive standing report from corporate Chief Risk Officer	✓	✓	✓	✓
Receive an annual operations update from Generation Resource Management				✓
Review Information Technology & Telecommunication Strategies	***As required***	***As required***	***As required***	✓
Review Insurance Management Strategies		✓		✓
Review status of pending/threatened litigation	✓	✓	✓	✓
Review External Reporting of Financial Information				✓
Review, revise and authorize routine banking arrangements and relationships	***As required***	***As required***	***As required***	***As required***

TERMS OF REFERENCE
AUDIT AND FINANCE COMMITTEE

Purpose

The purpose of the Audit and Finance Committee (the "Committee") is to assist the Board of Directors in fulfilling its obligations and oversight responsibilities relating to the audit process, financial reporting, the system of corporate controls, governance of the Corporation's pension plans, internal audit functions, treasury and legal compliance programs and when required, make recommendations to the full Board of Directors for approval. The Committee is also responsible for ensuring that principal risks associated with these issues are appropriately identified, monitored and managed.

In the process of overseeing the Corporation's audit procedures, the Committee will have unrestricted access to the Corporation's personnel and documents, and will be provided with the resources necessary to carry out its responsibilities, including the authority to engage independent counsel and other advisers as part of this resource requirement.

In fulfilling its purpose, it is the responsibility of the Committee to maintain free and open communication between the Committee, the external auditors, the internal auditors, and management of the Corporation, and to determine that all parties are aware of their responsibilities.

The Board of Directors of BC Hydro's subsidiary, Powerex Corp., has appointed its own Audit and Risk Management Committee. That committee has its own terms of reference and reports directly to the Powerex Corp. Board of Directors.

Composition

The Committee will be composed of at least three independent Directors. Determination as to whether a particular Director satisfies the requirements for membership on the Committee shall be made by the full Board of Directors.

Committee members will have a working familiarity with finance and accounting practices, and at least one Committee member will have accounting or related financial management expertise.

The External Auditors will be invited to attend Committee meetings as appropriate. The External Auditors will be notified of the Committee's meeting schedule and receive the appropriate meeting materials in advance of meetings.

The Corporate Secretary will be secretary to the Committee.

Duties and Responsibilities

The Committee, in carrying out its responsibilities, believes its policies and procedures should remain flexible, in order to best react to changing conditions and circumstances. The Committee will take appropriate actions to monitor the overall corporate 'tone' for quality financial reporting.

Subject to the powers and duties of the Board, the Committee, which shall hold a minimum of four meetings per year, will be responsible for addressing the issues and tasks specified in the Committee Timetable, below, and as further described in the sections which follow.

COMMITTEE TIMETABLE

	Q1 (May)	Q2 (Sept)	Q3 (Nov)	Q4 (Feb)
1. FINANCIAL REPORTING & FORECASTS				
a. Review and recommend Board approval of the Annual Financial Statements *	✓			
b. Review and recommend Board approval of Quarterly Financial Reports *		✓ (Aug)	✓	✓
c. Review and recommend Five Year Forecast (and quarterly updates thereto) to the Board of Directors for approval *	✓	✓ (Aug)	✓	✓
d. Review Risk Compliance Report *	✓	✓	✓	✓
2. EXTERNAL AUDIT				
a. Review External Auditor independence and quality control procedures *	✓			
b. Recommend appointment of External Auditors to Board	✓			
c. During the term of the external auditors engagement, review the proposed audit fees, review the qualifications and experience of senior audit personnel, assess the external auditors overall performance, and approve the annual renewal of the terms of the External Auditors' engagement	✓			
d. Annually (and otherwise, as required) approve, in advance, audit/non-audit services to be provided by the External Auditor and receive quarterly summaries of such services and related expenditures (in-camera)	*Approval*	✓	✓	✓
e. Review audit plan with External Auditors and management			✓	
f. Assess the relationship between the External Auditors and management	✓	✓	✓	✓
g. Review post-audit management letter prepared by the External Auditors and reviewing management's response and subsequent follow-up to any significant identified weaknesses		✓		
h. Review all issues related to any proposed change in External Auditors and the planned steps for an orderly transition	*As required*	*As required*	*As required*	*As required*
3. SYSTEMS AND CONTROLS				
a. Through communication with management, Internal Auditors and External Auditors, obtain assurance that accounting systems are reliable, and internal controls adequate, following up on any recommendations and management's responses	✓	✓	✓	✓
4. INTERNAL AUDIT				
a. Review and approve annual Internal Audit Plan, including an examination of the key risks identified for the organization and the appropriateness of Internal Audit resources	✓			
b. Review and approve the Audit Services Charter to ensure appropriateness of mission, accountability and scope of work for Internal Audit	✓			
c. Review Internal Audit reports, management's reponses and any subsequent follow-up *	✓	✓	✓	✓

COMMITTEE TIMETABLE

	Q1 (May)	Q2 (Sept)	Q3 (Nov)	Q4 (Feb)
d. Review quarterly summaries from Internal Audit of any reporting of financial concerns pursuant to the Code of Conduct	✓	✓	✓	✓
5. PENSION PLANS				
a. Receive annual and quarterly standing reports from the corporate Pension Management Committee	*Annual*	✓	✓	✓
b. Approve changes the British Columbia Hydro and Power Authority Pension Plan Funding Policy as required	*As required*	*As required*	*As required*	*As required*
c. Make recommendations to the Board respecting pension plan design, benefit levels and investment policies etc.	*As required*	*As required*	*As required*	*As required*
d. Approve Pension Plan Audited Statements, review actuarial methods and assumptions and review BC Hydro's contributions to the Pension plans				
e. Review actuarial valuation of Plan on a tri-annual basis	*As required*	*As required*	*As required*	*As required*
f. Receive pension fund asset allocation review, and make recommendations to Board (every 3-5 years)	*As required*	*As required*	*As required*	*As required*
g. Review and recommend to the Board of Directors the termination of investment managers, and review the appointment and termination by the PMC of actuaries, fund holders, advisors, administrators, External Auditors, investment managers (appointment only) and performance measurement service providers	*As required*	*As required*	*As required*	*As required*
h. At the request of the Board of Directors, and as appropriate, delegate to the PMC such other tasks relating to the operation of the pension plans that may be required from time to time	*As required*	*As required*	*As required*	*As required*
6. OTHER				
a. Receive reports on the status of any investigations underway pertaining to fraud, illegal acts or other compliance issues	*As required*	*As required*	*As required*	*As required*
b. Annually review a listing of all expenditures incurred by the Corporation with external audit firms other than those fees related to BC Hydro's own External Auditors which will be reported as previously described	✓			
c. Review and recommend approval of the annual Service Plan to the Board				✓
d. Receive an annual operations update from Generation Resource Management, including associated risks	✓			
e. Review Information Technology & Telecommunication Strategies	*As required*	*As required*	*As required*	✓
f. Review insurance program and insurance management strategies		✓		✓
g. Review status of current, pending or potential litigation	✓	✓	✓	✓
h. Review External Reporting of Financial Information				✓
i. Review expense reporting of Executive Officers and Directors			✓	

COMMITTEE TIMETABLE

	Q1 (May)	Q2 (Sept)	Q3 (Nov)	Q4 (Feb)
j. Review report from Management illustrating the Company's risk profile with respect to those risks related to the Committee's mandate and convey report to the Board	✓	✓	✓	✓
k. Review, revise and authorize routine banking arrangements and relationships	*As required*	*As required*	*As required*	*As required*
l. Approval of *Financial Information Act* return		✓		

**** Denotes further detail described in the sections below.***

Financial Reports and Forecasts

Annual Financial Statements (Timetable Item 1a)
The Committee will review the annual consolidated financial statements and Management Discussion and Analysis, and recommend their approval to the Board of Directors. The Committee will draw to the attention of the Board of Directors all financial matters it is aware of which may materially affect the current or future financial position of the Corporation.

The review must include:

a) determining whether appropriate accounting methods are being applied;
b) discussing with management and with the External Auditors:
   - all proposed changes in accounting policy,
   - the import and presentation of all material risks or uncertainties associated with financial matters or related business processes,
   - compliance with accounting standards,
   - significant adjustments arising out of the audit process,
   - related party transactions, and the business rationale for the transactions and whether appropriate disclosures have been made,
   - major issues as to the adequacy of the Corporation's internal control over financial reporting and any specific remedial actions adopted in light of significant deficiencies or material weaknesses,
   - consideration of the effect of regulatory and accounting initiatives, as well as off-balance sheet structures, on the financial statements,
   - all estimates or judgements of management that may be material to financial reporting,
   - consideration of the judgment of both management and the external auditors about the quality, not just the acceptability of accounting principles, and
   - the clarity of the disclosures in the financial statements;
c) discussing with management and the External Auditors significant financial reporting, recording or presentation issues discussed during the fiscal period and the manner of their resolution;
d) examining the consolidated audited annual financial statements in conjunction with the report of the External Auditors, which may include determining whether the statements:
   - properly reflect the significant accounting policies selected,
   - reflect estimates and other financial statement elements that are reasonable and consistent,

- adequately disclose all major transactions and issues,
- disclose all post-year-end significant events, and
- are understandable, relevant, reliable and comparable.

e) considering management's assessment of how the annual financial results impact the risks faced by the Corporation, and

f) considering any recommendations brought forward by management in terms of their impact on the risks faced by the Corporation.

Quarterly Financial Reports (Timetable Item 1b)
The Committee will review quarterly financial reports and related information and recommend their approval to the Board of Directors. The Board of Directors has delegated approving authority of the quarterly financial report to the Committee, in the event the Board meeting schedule proves untimely.

The quarterly financial reports are required to be reviewed by the External Auditors prior to their submission to the Committee, the results of which are discussed with the Committee.

Five Year Forecasts (Timetable Item 1c)
The Committee will review the annual Five Year Forecast, as well as quarterly updates, and recommend approval to the Board of Directors. The Board of Directors has delegated approving authority of the quarterly updates to the Committee, in the event the Board meeting schedule proves untimely. In approving the Five Year Forecast or quarterly updates, the Committee shall review management's assessment of how the forecasts will likely impact the principal risks faced by the organization.

Risk Compliance Report (Timetable Item 1e)
The Committee will review the quarterly update to the Risk Compliance Report, which reports on the following seven corporate policies which explicitly identify limits in respect of the identified risk areas:

a) Domestic Electricity Purchases and Sales - exposure to market energy prices

b) Trade Commodity – Value at Risk (VAR) in Powerex forward portfolio relative to Powerex Risk Management Policy limits

c) Trade Credit – credit exposures in Powerex portfolio (also relative to the Powerex Risk Management Policy limits)

d) Financial Institution Credit - exposures relative to limits

e) Foreign Exchange – exposures relative to limits

f) Debt – exposure to interest rate volatility

g) Pension Investments – asset allocation mix relative to limits

External Audit

The Committee shall have the direct responsibility for the appointment, compensation, retention and oversight of the External Auditors (including nominating the External Auditors to be proposed for Board approval). The Committee shall serve as the ultimate authority to which the Corporation's External Auditors are accountable. The Corporation shall provide appropriate funding, as determined by the Committee, for payment of compensation to the External Auditors and any experts or advisors employed by the Committee.

The Committee shall meet with the External Auditors, as the Committee may deem appropriate, to consider any matter which the Committee or External Auditors believe should be brought to the attention of the Board or the Shareholder.

External Auditor Independence (Timetable Item 2a)

In this respect, the Committee shall review and discuss with the External Auditors all relationships that the External Auditors and their affiliates have with the Corporation and its affiliates in order to determine the External Auditors' independence, including, without limitation (i) requesting, receiving and reviewing, on a periodic basis, a formal written statement from the External Auditors delineating all relationships that may reasonably be thought to bear on the independence of the External Auditors with respect to the Corporation (ii) discussing with the External Auditors any disclosed relationships or services that the External Auditors believe may affect the objectivity and independence of the External Auditors, and (iii) recommending that the Board take appropriate action in response to the External Auditors' report to satisfy itself of the External Auditors' independence.

External Auditor Quality Control (Timetable Item 2a)

In this respect, the Committee shall, at least annually, obtain and review a report by the External Auditors describing the auditing firm's internal quality-control procedures, any material issues raised by the most recent internal quality-control review or peer review of the auditing firm or by any inquiry or investigation by government or professional authorities within the preceding five years respecting one or more independent audits carried out by the External Auditors and any steps taken to deal with any such issues and all relationships between the External Auditors and the Corporation;

Internal Audit

Reports of Internal Audit (Timetable Item 4b)

The Committee will review audit reports issued by Internal Audit, management's response and subsequent follow-up of identified weaknesses. The review of audit reports will include:

a) identification of significant risk exposures and effectiveness of related risk management measures;
b) assessment of the adequacy of the Corporation's internal controls, and
c) recommendations for the improvements of the Corporation's internal controls and risk management.

In order to focus on key risk areas, the Committee will only review the full audit report for reports identified as high risk by Internal Audit. However, executive summaries will be reviewed for all reports issued and the Committee will be provided with low and medium risk internal audit reports upon request.

The Committee's responsibilities with respect Internal Audit include reviewing any audit reports prepared with respect to the Corporation's enterprise risk management framework.

Meeting with the Director, Audit Services

The Committee Chair will meet with the Director, Audit Services in advance of each quarterly Committee meeting to discuss all items to be presented. During quarterly Committee meetings, the Committee shall:

a) meet with the Director, Audit Services, without management present:

b) review, in consultation with senior management, the performance of the Audit Services department; and
c) review and approve, in consultation with senior management, proposed changes in the position of the Director, Audit Services.

Accountability

At every quarterly meeting of the Board, or more often if required, the Committee shall provide a report on its deliberations and recommendations since its last such report. Minutes of the Committee's meetings will also be made available to all Directors on request.

TERMS OF REFERENCE
AUDIT AND FINANCE COMMITTEE

Purpose

The purpose of the Audit and Finance Committee (the "Committee") is to assist the Board of Directors in fulfilling its obligations and oversight responsibilities relating to the audit process, financial reporting, the system of corporate controls, governance of the Corporation's pension plans, internal audit functions, treasury and legal compliance programs and when required, make recommendations to the full Board of Directors for approval. The Committee is also responsible for ensuring that principal risks associated with these issues are appropriately identified, monitored and managed.

In the process of overseeing the Corporation's audit procedures, the Committee will have unrestricted access to the Corporation's personnel and documents, and will be provided with the resources necessary to carry out its responsibilities, including the authority to engage independent counsel and other advisers as part of this resource requirement.

In fulfilling its purpose, it is the responsibility of the Committee to maintain free and open communication between the Committee, the external auditors, the internal auditors, and management of the Corporation, and to determine that all parties are aware of their responsibilities.

The Board of Directors of BC Hydro's subsidiary, Powerex Corp., has appointed its own Audit and Risk Management Committee. That committee has its own terms of reference and reports directly to the Powerex Corp. Board of Directors.

Composition

The Committee will be composed of at least three Directors. Determination as to whether a particular Director satisfies the requirements for membership on the Committee shall be made by the full Board of Directors.

Committee members will be financially literate[1], and at least one Committee member or advisor should have accounting or financial management expertise.

The External Auditors will be invited to attend Committee meetings as appropriate. The External Auditors will be notified of the Committee's meeting schedule and receive the appropriate meeting materials in advance of meetings.

The Corporate Secretary will be secretary to the Committee.

Duties and Responsibilities

The Committee, in carrying out its responsibilities, believes its policies and procedures should remain flexible, in order to best react to changing conditions and circumstances. The Committee will take appropriate actions to monitor the overall corporate 'tone' for quality financial reporting.

[1] A member shall be considered financially literate if he or she has the ability to read and understand a set of financial statements that present a breadth of accounting issues and level of complexity that are generally comparable to the breadth and complexity of the issues that can be reasonably expected to be raised by the Company's consolidated financial statements.

Subject to the powers and duties of the Board, the Committee, which shall hold a minimum of four meetings per year, will be responsible for addressing the issues and tasks specified in the Committee Timetable, below, and as further described in the sections which follow.

COMMITTEE TIMETABLE

	Q1 (May)	Q2 (Sept)	Q3 (Nov)	Q4 (Feb)
1. FINANCIAL REPORTING & FORECASTS				
a. Review and recommend Board approval of the Annual Financial Statements *	✓			
b. Review and recommend Board approval of Quarterly Financial Reports *		✓ (Aug)	✓	✓(Jan)
c. Review and recommend Five Year Forecast (and quarterly updates thereto) to the Board of Directors for approval *	✓	✓ (Aug)	✓	✓(Jan)
d. Review Quarterly Treasury Report *	✓	✓	✓	✓
2. EXTERNAL AUDIT				
a. Review External Auditor independence and quality control procedures *	✓			
b. Recommend appointment of External Auditors to Board	✓			
c. During the term of the external auditors engagement, review the proposed audit fees, review the qualifications and experience of senior audit personnel, assess the external auditors overall performance, and approve the annual renewal of the terms of the External Auditors' engagement	✓			
d. Annually (and otherwise, as required) approve, in advance, audit/non-audit services to be provided by the External Auditor and receive quarterly summaries of such services and related expenditures (in-camera)	*Approval*	✓	✓	✓
e. Review audit plan with External Auditors and management			✓	
f. Assess the relationship between the External Auditors and management	✓	✓	✓	✓
g. Review post-audit management letter prepared by the External Auditors and reviewing management's response and subsequent follow-up to any significant identified weaknesses		✓		
h. Review all issues related to any proposed change in External Auditors and the planned steps for an orderly transition	*As required*	*As required*	*As required*	*As required*
3. SYSTEMS AND CONTROLS				
a. Through communication with management, Internal Auditors and External Auditors, obtain assurance that accounting systems are reliable, and internal controls adequate, following up on any recommendations and management's responses	✓	✓	✓	✓
4. INTERNAL AUDIT				
a. Review and approve annual Internal Audit Plan, including an examination of the key risks identified for the organization and the appropriateness of Internal Audit resources	✓			
b. Review and approve the Audit Services Charter to	✓			

COMMITTEE TIMETABLE

	Q1 (May)	Q2 (Sept)	Q3 (Nov)	Q4 (Feb)
ensure appropriateness of mission, accountability and scope of work for Internal Audit				
c. Review Internal Quarterly Audit Reports, management's reponses and any subsequent follow-up *	✓	✓	✓	✓
d. Review quarterly summaries from Internal Audit of any reporting of financial concerns pursuant to the Code of Conduct	✓	✓	✓	✓
5. PENSION PLANS				
a. Receive annual and quarterly reports from the corporate Pension Management Committee (this may be included in the Quarterly Treasury Report – item 1d)	*Annual*	✓	✓	✓
b. Approve changes the British Columbia Hydro and Power Authority Pension Plan Funding Policy as required	*As required*	*As required*	*As required*	*As required*
c. Make recommendations to the Board respecting pension plan design, benefit levels, investment policies, etc.	*As required*	*As required*	*As required*	*As required*
d. Approve Pension Plan Audited Statements	✓			
e. Review actuarial valuation and assumptions of Plan on an as-needed basis	*As required*	*As required*	*As required*	*As required*
f. Receive pension fund asset allocation review, and make recommendations to Board (every 3-5 years)	*As required*	*As required*	*As required*	*As required*
g. Review and recommend to the Board of Directors the termination of investment managers, and review the appointment and termination by the PMC of actuaries, fund holders, administrators, External Auditors, and investment managers (appointment only)	*As required*	*As required*	*As required*	*As required*
h. At the request of the Board of Directors, and as appropriate, delegate to the PMC such other tasks relating to the operation of the pension plans that may be required from time to time	*As required*	*As required*	*As required*	*As required*
6. OTHER				
a. Receive reports on the status of any investigations underway pertaining to fraud, illegal acts or other compliance issues	*As required*	*As required*	*As required*	*As required*
b. Annually and quarterly review a listing of all expenditures incurred by the Corporation with external audit firms other than those fees related to BC Hydro's own External Auditors (may be combined with the report in 2d)	✓	✓	✓	✓
c. Receive an annual operations update from Generation Resource Management, including associated risks	*As required*	*As required*	*As required*	*As required*
d. Review Quarterly Information Technology & Telecommunication Strategies	✓	✓	✓	✓
e. Review insurance program and insurance management strategies • Executive Liability Insurance • General and Property Insurance		✓		✓
f. Review status of material litigation: current, pending or potential	✓	✓	✓	✓

COMMITTEE TIMETABLE

	Q1 (May)	Q2 (Sept)	Q3 (Nov)	Q4 (Feb)
g. Review External Reporting of Financial Information				✓
h. Review expense reporting of Executive Officers and Directors		✓		
i. Review report from Management illustrating the Company's risk profile with respect to any Board-identified "key risks" related to the Committee's mandate and convey report to the Board	✓	✓	✓	✓
j. Review, revise and authorize routine banking arrangements and relationships	*As required*	*As required*	*As required*	*As required*
k. Review and recommend approval of the *Financial Information Act* return to the Board		✓		
l. Review Committee Terms of Reference, and recommend revisions to Corporate Governance Committee for approval			✓	

**** Denotes further detail described in the sections below.***

Financial Reports and Forecasts

Annual Financial Statements (Timetable Item 1a)

The Committee will review the annual consolidated financial statements and Management Discussion and Analysis, and recommend their approval to the Board of Directors. Such recommendation shall be guided by the requirement that public reporting represents a complete, accurate and balanced portrayal of BC Hydro's performance and financial situation. Moreover, the Committee will draw to the attention of the Board of Directors all financial matters it is aware of which may materially affect the current or future financial position of the Corporation.

The review must include:

a) determining whether appropriate accounting methods are being applied;
b) discussing with management and with the External Auditors:
   - all proposed changes in accounting policy,
   - the import and presentation of all material risks or uncertainties associated with financial matters or related business processes,
   - compliance with accounting standards,
   - significant adjustments arising out of the audit process,
   - related party transactions, and the business rationale for the transactions and whether appropriate disclosures have been made,
   - major issues as to the adequacy of the Corporation's internal control over financial reporting and any specific remedial actions adopted in light of significant deficiencies or material weaknesses,
   - consideration of the effect of regulatory and accounting initiatives, as well as off-balance sheet structures, on the financial statements,
   - all estimates or judgements of management that may be material to financial reporting,
   - consideration of the judgment of both management and the external auditors about the quality, not just the acceptability of accounting principles, and

- the clarity of the disclosures in the financial statements;

c) discussing with management and the External Auditors significant financial reporting, recording or presentation issues discussed during the fiscal period and the manner of their resolution;

d) examining the consolidated audited annual financial statements in conjunction with the report of the External Auditors, which may include determining whether the statements:
   - properly reflect the significant accounting policies selected,
   - reflect estimates and other financial statement elements that are reasonable and consistent,
   - adequately disclose all major transactions and issues,
   - disclose all post-year-end significant events, and
   - are understandable, relevant, reliable and comparable.

e) considering management's assessment of how the annual financial results impact the risks faced by the Corporation, and

f) considering any recommendations brought forward by management in terms of their impact on the risks faced by the Corporation.

Quarterly Financial Reports (Timetable Item 1b)
The Committee will review quarterly financial reports and related information and recommend their approval to the Board of Directors. The Board of Directors has delegated approving authority of the quarterly financial report to the Committee, in the event the Board meeting schedule proves untimely.

The quarterly financial reports are required to be reviewed by the External Auditors prior to their submission to the Committee, the results of which are discussed with the Committee.

Five Year Forecasts (Timetable Item 1c)
The Committee will review the annual Five Year Forecast, as well as quarterly updates, and recommend approval to the Board of Directors. The Board of Directors has delegated approving authority of the quarterly updates to the Committee, in the event the Board meeting schedule proves untimely. In approving the Five Year Forecast or quarterly updates, the Committee shall review management's assessment of how the forecasts will likely impact the principal risks faced by the organization.

Treasury Report (Timetable Item 1e)
The Committee will review the quarterly update to the Treasury Report, which reports on the following identified risk areas:

a) Credit Exposure:
   i. Financial Institutions
   ii. Industrial Customers
   iii. Other Notable Counterparties
b) Foreign Exchange – exposures relative to limits
c) Debt – exposure to interest rate volatility
d) Pension Investments – asset allocation mix relative to limits

External Audit

The Committee shall have the direct responsibility for the appointment, compensation, retention and oversight of the External Auditors (including nominating the External Auditors to be proposed for Board approval). The Committee shall serve as the ultimate authority to which the

Corporation's External Auditors are accountable. The Corporation shall provide appropriate funding, as determined by the Committee, for payment of compensation to the External Auditors and any experts or advisors employed by the Committee.

The Committee shall meet with the External Auditors, as the Committee may deem appropriate, to consider any matter which the Committee or External Auditors believe should be brought to the attention of the Board or the Shareholder.

External Auditor Independence (Timetable Item 2a)

In this respect, the Committee shall review and discuss with the External Auditors all relationships that the External Auditors and their affiliates have with the Corporation and its affiliates in order to determine the External Auditors' independence, including, without limitation (i) requesting, receiving and reviewing, on a periodic basis, a formal written statement from the External Auditors delineating all relationships that may reasonably be thought to bear on the independence of the External Auditors with respect to the Corporation (ii) discussing with the External Auditors any disclosed relationships or services that the External Auditors believe may affect the objectivity and independence of the External Auditors, and (iii) recommending that the Board take appropriate action in response to the External Auditors' report to satisfy itself of the External Auditors' independence.

External Auditor Quality Control (Timetable Item 2a)

In this respect, the Committee shall, at least annually, obtain and review a report by the External Auditors describing the auditing firm's internal quality-control procedures, any material issues raised by the most recent internal quality-control review or peer review of the auditing firm or by any inquiry or investigation by government or professional authorities within the preceding five years respecting one or more independent audits carried out by the External Auditors and any steps taken to deal with any such issues and all relationships between the External Auditors and the Corporation;

Internal Audit

Reports of Internal Audit (Timetable Item 4c)

The Committee will review audit reports issued by Internal Audit, management's response and subsequent follow-up of identified weaknesses. The review of audit reports will include:

a) identification of significant risk exposures and effectiveness of related risk management measures;
b) assessment of the adequacy of the Corporation's internal controls, and
c) recommendations for the improvements of the Corporation's internal controls and risk management.

In order to focus on key risk areas, the Committee will only review the full audit report for reports identified as high risk by Internal Audit. However, executive summaries will be reviewed for all reports issued and the Committee will be provided with low and medium risk internal audit reports upon request.

The Committee's responsibilities with respect Internal Audit include reviewing any audit reports prepared with respect to the Corporation's enterprise risk management framework.

Meeting with the Director, Audit Services

The Committee Chair will meet with the Director, Audit Services in advance of each quarterly Committee meeting to discuss all items to be presented. During quarterly Committee meetings, the Committee shall:

a) meet with the Director, Audit Services, without management present:
b) review, in consultation with senior management, the performance of the Audit Services department; and
c) review and approve, in consultation with senior management, proposed changes in the position of the Director, Audit Services.

In addition, the Committee shall, from time to time, assure itself that the internal audit function has adopted recognized standards such as the Institute of Internal Auditors International Professional Standards.

Accountability

At every quarterly meeting of the Board, or more often if required, the Committee shall provide a report on its deliberations and recommendations since its last such report. Minutes of the Committee's meetings will also be made available to all Directors on request.

TERMS OF REFERENCE
AUDIT AND FINANCE COMMITTEE

Purpose

The purpose of the Audit and Finance Committee (the "Committee") is to assist the Board of Directors in fulfilling its obligations and oversight responsibilities relating to the audit process, financial reporting, the system of corporate controls, governance of the Corporation's pension plans, internal audit functions, treasury and legal compliance programs and when required, make recommendations to the full Board of Directors for approval. The Committee is also responsible for ensuring that principal risks associated with these issues are appropriately identified, monitored and managed.

In the process of overseeing the Corporation's audit procedures, the Committee will have unrestricted access to the Corporation's personnel and documents, and will be provided with the resources necessary to carry out its responsibilities, including the authority to engage independent counsel and other advisers as part of this resource requirement.

In fulfilling its purpose, it is the responsibility of the Committee to maintain free and open communication between the Committee, the external auditors, the internal auditors, and management of the Corporation, and to determine that all parties are aware of their responsibilities.

The Board of Directors of BC Hydro's subsidiary, Powerex Corp., has appointed its own Audit and Risk Management Committee. That committee has its own terms of reference and reports directly to the Powerex Corp. Board of Directors.

Composition

The Committee will be composed of at least three Directors. Determination as to whether a particular Director satisfies the requirements for membership on the Committee shall be made by the full Board of Directors.

Committee members will be financially literate[1], and at least one Committee member or advisor should have accounting or financial management expertise.

The External Auditors will be invited to attend Committee meetings as appropriate. The External Auditors will be notified of the Committee's meeting schedule and receive the appropriate meeting materials in advance of meetings.

The Corporate Secretary will be secretary to the Committee.

Duties and Responsibilities

The Committee, in carrying out its responsibilities, believes its policies and procedures should remain flexible, in order to best react to changing conditions and circumstances. The Committee will take appropriate actions to monitor the overall corporate 'tone' for quality financial reporting.

[1] A member shall be considered financially literate if he or she has the ability to read and understand a set of financial statements that present a breadth of accounting issues and level of complexity that are generally comparable to the breadth and complexity of the issues that can be reasonably expected to be raised by the Company's consolidated financial statements.

Subject to the powers and duties of the Board, the Committee, which shall hold a minimum of four meetings per year, will be responsible for addressing the issues and tasks specified in the Committee Timetable, below, and as further described in the sections which follow.

COMMITTEE TIMETABLE

	Q1 (May)	Q2 (Sept)	Q3 (Nov)	Q4 (Feb)
1. FINANCIAL REPORTING & FORECASTS				
a. Review and recommend Board approval of the Annual Financial Statements *	✓			
b. Review and recommend Board approval of Quarterly Financial Reports *		✓ (Aug)	✓	✓(Jan)
c. Review and recommend Five Year Forecast (and quarterly updates thereto) to the Board of Directors for approval *	✓	✓ (Aug)	✓	✓(Jan)
d. Review Quarterly Treasury Report *	✓	✓	✓	✓
2. EXTERNAL AUDIT				
a. Review External Auditor independence and quality control procedures *	✓			
b. Recommend appointment of External Auditors to Board	✓			
c. During the term of the external auditors engagement, review the proposed audit fees, review the qualifications and experience of senior audit personnel, assess the external auditors overall performance, and approve the annual renewal of the terms of the External Auditors' engagement	✓			
d. Annually (and otherwise, as required) approve, in advance, audit/non-audit services to be provided by the External Auditor and receive quarterly summaries of such services and related expenditures (in-camera)	*Approval*	✓	✓	✓
e. Review audit plan with External Auditors and management			✓	
f. Assess the relationship between the External Auditors and management	✓	✓	✓	✓
g. Review post-audit management letter prepared by the External Auditors and reviewing management's response and subsequent follow-up to any significant identified weaknesses		✓		
h. Review all issues related to any proposed change in External Auditors and the planned steps for an orderly transition	*As required*	*As required*	*As required*	*As required*
3. SYSTEMS AND CONTROLS				
a. Through communication with management, Internal Auditors and External Auditors, obtain assurance that accounting systems are reliable, and internal controls adequate, following up on any recommendations and management's responses	✓	✓	✓	✓
4. INTERNAL AUDIT				
a. Review and approve annual Internal Audit Plan, including an examination of the key risks identified for the organization and the appropriateness of Internal Audit resources	✓			
b. Review and approve the Audit Services Charter to	✓			

COMMITTEE TIMETABLE

	Q1 (May)	Q2 (Sept)	Q3 (Nov)	Q4 (Feb)
ensure appropriateness of mission, accountability and scope of work for Internal Audit (alternate years)				
c. Review Internal Quarterly Audit Reports, management's reponses and any subsequent follow-up *	✓	✓	✓	✓
d. Director of Audit Services:				
i. Performance assessment – provide CFO with input relating to the performance of the Director of Audit Services				✓
ii. Approve final performance assessment and compensation implications	✓			
iii. Approve appointment and removal	*As required*	*As required*	*As required*	*As required*
e. Review quarterly summaries from Internal Audit of any reporting of financial concerns pursuant to the Code of Conduct	✓	✓	✓	✓
5. PENSION PLANS				
a. Receive annual and quarterly reports from the corporate Pension Management Committee (this may be included in the Quarterly Treasury Report – item 1d)	*Annual*	✓	✓	✓
b. Approve changes the British Columbia Hydro and Power Authority Pension Plan Funding Policy as required	*As required*	*As required*	*As required*	*As required*
c. Make recommendations to the Board respecting pension plan design, benefit levels, investment policies, etc.	*As required*	*As required*	*As required*	*As required*
d. Approve Pension Plan Audited Statements	✓			
e. Review actuarial valuation and assumptions of Plan on an as-needed basis	*As required*	*As required*	*As required*	*As required*
f. Receive pension fund asset allocation review, and make recommendations to Board (every 3-5 years)	*As required*	*As required*	*As required*	*As required*
g. Review and recommend to the Board of Directors the termination of investment managers, and review the appointment and termination by the PMC of actuaries, fund holders, administrators, External Auditors, and investment managers (appointment only)	*As required*	*As required*	*As required*	*As required*
h. At the request of the Board of Directors, and as appropriate, delegate to the PMC such other tasks relating to the operation of the pension plans that may be required from time to time	*As required*	*As required*	*As required*	*As required*
6. OTHER				
a. Receive reports on the status of any investigations underway pertaining to fraud, illegal acts or other compliance issues	*As required*	*As required*	*As required*	*As required*
b. Annually and quarterly review a listing of all expenditures incurred by the Corporation with external audit firms other than those fees related to BC Hydro's own External Auditors (may be combined with the report in 2d)	✓	✓	✓	✓
c. Receive an annual operations update from Generation Resource Management, including associated risks	*As required*	*As required*	*As required*	*As required*

COMMITTEE TIMETABLE

	Q1 (May)	Q2 (Sept)	Q3 (Nov)	Q4 (Feb)
d. Review Quarterly Information Technology & Telecommunication Strategies	✓	✓	✓	✓
e. Review insurance program and insurance management strategies • Executive Liability Insurance • General and Property Insurance		✓		✓
f. Review status of material litigation: current, pending or potential	✓	✓	✓	✓
g. Review External Reporting of Financial Information				✓
h. Review expense reporting of Executive Officers and Directors		✓		
i. Review report from Management illustrating the Company's risk profile with respect to any Board-identified "key risks" related to the Committee's mandate and convey report to the Board	✓	✓	✓	✓
j. Review, revise and authorize routine banking arrangements and relationships	*As required*	*As required*	*As required*	*As required*
k. Review and recommend approval of the *Financial Information Act* return to the Board		✓		
l. Review Committee Terms of Reference, and recommend revisions to Corporate Governance Committee for approval			✓	

**** Denotes further detail described in the sections below.***

Financial Reports and Forecasts

Annual Financial Statements (Timetable Item 1a)

The Committee will review the annual consolidated financial statements and Management Discussion and Analysis, and recommend their approval to the Board of Directors. Such recommendation shall be guided by the requirement that public reporting represents a complete, accurate and balanced portrayal of BC Hydro's performance and financial situation. Moreover, the Committee will draw to the attention of the Board of Directors all financial matters it is aware of which may materially affect the current or future financial position of the Corporation.

The review must include:

a) determining whether appropriate accounting methods are being applied;
b) discussing with management and with the External Auditors:
   - all proposed changes in accounting policy,
   - the import and presentation of all material risks or uncertainties associated with financial matters or related business processes,
   - compliance with accounting standards,
   - significant adjustments arising out of the audit process,
   - related party transactions, and the business rationale for the transactions and whether appropriate disclosures have been made,

- major issues as to the adequacy of the Corporation's internal control over financial reporting and any specific remedial actions adopted in light of significant deficiencies or material weaknesses,
- consideration of the effect of regulatory and accounting initiatives, as well as off-balance sheet structures, on the financial statements,
- all estimates or judgements of management that may be material to financial reporting,
- consideration of the judgment of both management and the external auditors about the quality, not just the acceptability of accounting principles, and
- the clarity of the disclosures in the financial statements;

c) discussing with management and the External Auditors significant financial reporting, recording or presentation issues discussed during the fiscal period and the manner of their resolution;

d) examining the consolidated audited annual financial statements in conjunction with the report of the External Auditors, which may include determining whether the statements:
   - properly reflect the significant accounting policies selected,
   - reflect estimates and other financial statement elements that are reasonable and consistent,
   - adequately disclose all major transactions and issues,
   - disclose all post-year-end significant events, and
   - are understandable, relevant, reliable and comparable.

e) considering management's assessment of how the annual financial results impact the risks faced by the Corporation, and

f) considering any recommendations brought forward by management in terms of their impact on the risks faced by the Corporation.

Quarterly Financial Reports (Timetable Item 1b)

The Committee will review quarterly financial reports and related information and recommend their approval to the Board of Directors. The Board of Directors has delegated approving authority of the quarterly financial report to the Committee, in the event the Board meeting schedule proves untimely.

The quarterly financial reports are required to be reviewed by the External Auditors prior to their submission to the Committee, the results of which are discussed with the Committee.

Five Year Forecasts (Timetable Item 1c)

The Committee will review the annual Five Year Forecast, as well as quarterly updates, and recommend approval to the Board of Directors. The Board of Directors has delegated approving authority of the quarterly updates to the Committee, in the event the Board meeting schedule proves untimely. In approving the Five Year Forecast or quarterly updates, the Committee shall review management's assessment of how the forecasts will likely impact the principal risks faced by the organization.

Treasury Report (Timetable Item 1e)

The Committee will review the quarterly update to the Treasury Report, which reports on the following identified risk areas:

a) Credit Exposure:
   i. Financial Institutions
   ii. Industrial Customers
   iii. Other Notable Counterparties

b) Foreign Exchange – exposures relative to limits
c) Debt – exposure to interest rate volatility
d) Pension Investments – asset allocation mix relative to limits

External Audit

The Committee shall have the direct responsibility for the appointment, compensation, retention and oversight of the External Auditors (including nominating the External Auditors to be proposed for Board approval). The Committee shall serve as the ultimate authority to which the Corporation's External Auditors are accountable. The Corporation shall provide appropriate funding, as determined by the Committee, for payment of compensation to the External Auditors and any experts or advisors employed by the Committee.

The Committee shall meet with the External Auditors, as the Committee may deem appropriate, to consider any matter which the Committee or External Auditors believe should be brought to the attention of the Board or the Shareholder.

External Auditor Independence (Timetable Item 2a)

In this respect, the Committee shall review and discuss with the External Auditors all relationships that the External Auditors and their affiliates have with the Corporation and its affiliates in order to determine the External Auditors' independence, including, without limitation (i) requesting, receiving and reviewing, on a periodic basis, a formal written statement from the External Auditors delineating all relationships that may reasonably be thought to bear on the independence of the External Auditors with respect to the Corporation (ii) discussing with the External Auditors any disclosed relationships or services that the External Auditors believe may affect the objectivity and independence of the External Auditors, and (iii) recommending that the Board take appropriate action in response to the External Auditors' report to satisfy itself of the External Auditors' independence.

External Auditor Quality Control (Timetable Item 2a)

In this respect, the Committee shall, at least annually, obtain and review a report by the External Auditors describing the auditing firm's internal quality-control procedures, any material issues raised by the most recent internal quality-control review or peer review of the auditing firm or by any inquiry or investigation by government or professional authorities within the preceding five years respecting one or more independent audits carried out by the External Auditors and any steps taken to deal with any such issues and all relationships between the External Auditors and the Corporation;

Internal Audit

Reports of Internal Audit (Timetable Item 4c)

The Committee will review audit reports issued by Internal Audit, management's response and subsequent follow-up of identified weaknesses. The review of audit reports will include:

a) identification of significant risk exposures and effectiveness of related risk management measures;
b) assessment of the adequacy of the Corporation's internal controls, and
c) recommendations for the improvements of the Corporation's internal controls and risk management.

In order to focus on key risk areas, the Committee will only review the full audit report for reports identified as high risk by Internal Audit. However, executive summaries will be reviewed for all

reports issued and the Committee will be provided with low and medium risk internal audit reports upon request.

The Committee's responsibilities with respect Internal Audit include reviewing any audit reports prepared with respect to the Corporation's enterprise risk management framework.

Meeting with the Director, Audit Services
The Committee Chair will meet with the Director, Audit Services in advance of each quarterly Committee meeting to discuss all items to be presented. During quarterly Committee meetings, the Committee shall:

a) meet with the Director, Audit Services, without management present:
b) review, in consultation with senior management, the performance of the Audit Services department; and
c) review and approve, in consultation with senior management, proposed changes in the position of the Director, Audit Services.

In addition, the Committee shall, from time to time, assure itself that the internal audit function has adopted recognized standards such as the Institute of Internal Auditors International Professional Standards.

Accountability

At every quarterly meeting of the Board, or more often if required, the Committee shall provide a report on its deliberations and recommendations since its last such report. Minutes of the Committee's meetings will also be made available to all Directors on request.

TERMS OF REFERENCE
AUDIT AND FINANCE COMMITTEE

Purpose

The purpose of the Audit and Finance Committee (the "Committee") is to assist the Board of Directors in fulfilling its obligations and oversight responsibilities relating to the audit process, financial reporting, the system of corporate controls, governance of the Corporation's pension plans, internal audit functions, treasury and legal compliance programs. The Committee is also responsible for ensuring that principal risks associated with these issues are appropriately identified, monitored and managed.

In addition, the Committee shall oversee the status of any investigations pertaining to fraud, illegal acts or other compliance issues; monitor strategic issues related to Supply Chain/Procurement; and monitor strategic issues related to the Information Technology & Telecommunication.

In fulfilling its purpose, the Committee is to maintain free and open communication among itself, the external auditors, the internal auditors, and management.

Composition

The Committee will be composed of at least three Directors. Committee members will be financially literate[1], and at least one Committee member or advisor should have accounting or financial management expertise.

The External Auditors will be invited to attend Committee meetings as appropriate. The External Auditors will be notified of the Committee's meeting schedule and receive the appropriate meeting materials in advance of meetings.

The Corporate Secretary will be secretary to the Committee.

COMMITTEE TIMETABLE

	Q1 (May)	**Q2 (Sept)**	**Q3 (Nov)**	**Q4 (Feb)**
1. FINANCIAL REPORTING & FORECASTS				
a. Annual Financial Statements *	Recommend			
b. Quarterly Financial Reports *		Recommend (Aug)	Recommend	Recommend (Jan)
c. Five Year Forecast (and quarterly updates) *		Recommend (Aug)	Recommend	Recommend (Jan)
d. Quarterly Treasury Report *	Review	Review	Review	Review
2. EXTERNAL AUDIT				
a. External Auditors • appointment • annual renewal of terms/fees	Recommend Approve			

[1] A member shall be considered financially literate if he or she has the ability to read and understand a set of financial statements that present a breadth of accounting issues and level of complexity that are generally comparable to the breadth and complexity of the issues that can be reasonably expected to be raised by the Company's consolidated financial statements.

COMMITTEE TIMETABLE

	Q1 (May)	Q2 (Sept)	Q3 (Nov)	Q4 (Feb)
b. Audit/non-audit services to be provided by the External Auditor (in-camera)	Approve	Tabled Report	Tabled Report	Tabled Report
c. External Audit Plan			Review	
d. External Auditors' post-audit management letter, and management's response	Review			
3. INTERNAL AUDIT				
a. Internal Audit Plan	Approve			
b. Audit Services Charter: appropriateness of mission, accountability and scope (even fiscal years)	Approve			
c. Quarterly Audit Reports *	Review	Review	Review	Review
d. Director of Audit Services:				
i. Performance assessment (input to the review process)				Review
ii. Final performance assessment and compensation implications	Approve			
e. Employee Accounting and Audit Concerns Report	Tabled Report	Tabled Report	Tabled Report	Tabled Report
4. PENSION PLANS				
a. Corporate Pension Management Committee Reports (may be included in the Quarterly Treasury Report – item 1d)	Review	Review	Review	Review
b. Pension Plan Audited Statements	Approve			
5. OTHER				
a. Insurance program and management strategies • Executive Liability Insurance • General and Property Insurance		Review		Review
b. Summary of Significant Legal Claims	Tabled Report	Tabled Report	Tabled Report	Tabled Report
c. Risk Report ("key risks" related to the Committee's mandate)	Tabled Report	Tabled Report	Tabled Report	Tabled Report
d. *Financial Information Act* return (incl. expense reporting of Executive Officers and Directors)		Recommend		
e. Accounting Standards Update	Tabled Report	Tabled Report	Tabled Report	Tabled Report
f. Comparative Rates Report			Review	
g. Committee Terms of Reference			Recommend	

Note: "Recommend" means to consider the item and make a recommendation to the Board with respect to approval of that item.
**** Denotes further detail described in the sections below.***

Financial Reports and Forecasts

Annual Financial Statements (Timetable Item 1a)

The Committee will review the annual consolidated financial statements and Management Discussion and Analysis, and recommend their approval to the Board of Directors. Such recommendation shall be guided by the requirement that public reporting represents a complete, accurate and balanced portrayal of BC Hydro's performance and financial situation.

Moreover, the Committee will draw to the attention of the Board of Directors all financial matters it is aware of which may materially affect the current or future financial position of the Corporation.

In considering the financial statements, the Committee shall:

a) obtain assurance, through communication with management, Internal Auditors and External Auditors, that accounting systems are reliable, and internal controls adequate;
b) determine whether appropriate accounting methods are being applied;
c) discuss with management and with the External Auditors such things as follows:
    - all proposed changes in accounting policy,
    - material risks or uncertainties associated with financial matters or business processes,
    - compliance with accounting standards,
    - significant adjustments arising out of the audit process,
    - related party transactions, including business rationale and applicable disclosures,
    - major issues as to the adequacy of the Corporation's internal control over financial reporting and any specific remedial actions adopted as a result,
    - consideration of the effect of regulatory and accounting initiatives, as well as off-balance sheet structures, on the financial statements,
    - all estimates or judgements of management that may be material to financial reporting,
    - judgement of both management and the External Auditors about the quality of accounting principles, and
    - the clarity of the disclosures in the financial statements;
d) discuss with management and the External Auditors significant financial reporting, recording or presentation issues discussed during the fiscal period and the manner of their resolution;
e) examine the consolidated audited annual financial statements in conjunction with the report of the External Auditors, which may include determining whether the statements:
    - properly reflect the significant accounting policies selected,
    - reflect estimates and other financial statement elements that are reasonable and consistent,
    - adequately disclose all major transactions and issues,
    - disclose all post-year-end significant events, and
    - are understandable, relevant, reliable and comparable.
f) consider management's assessment of how the annual financial results impact the risks faced by the Corporation, and
g) consider any recommendations brought forward by management in terms of their impact on the risks faced by the Corporation.

Quarterly Financial Reports (Timetable Item 1b)

The Committee will review quarterly financial reports and related information and recommend their approval to the Board of Directors. The Board of Directors has delegated approving authority of the quarterly financial report to the Committee, in the event the Board meeting schedule proves untimely.

The quarterly financial reports are required to be reviewed by the External Auditors prior to their submission to the Committee, the results of which are discussed with the Committee.

Five Year Forecasts (Timetable Item 1c)

The Committee will review the annual Five Year Forecast, as well as any quarterly updates, and recommend approval to the Board of Directors. The Board of Directors has delegated approving authority of the quarterly updates to the Committee, in the event the Board meeting schedule proves untimely. In approving the Five Year Forecast or quarterly updates, the Committee shall review management's assessment of how the forecasts will likely impact the principal risks faced by the organization.

Treasury Report (Timetable Item 1d)

The Committee will review the Quarterly Treasury Report, which reports on the following identified risk areas:

a) Credit Exposure
b) Foreign Exchange
c) Debt
d) Pension Plan

External Audit

The Committee shall have the direct responsibility for the appointment, compensation, retention and oversight of the External Auditors. This shall include nominating the External Auditors to be proposed for Board approval as well as ensuring an efficient and orderly transition upon change in External Auditor). The Committee shall serve as the ultimate authority to which the Corporation's External Auditors are accountable, and shall assess the ongoing relationship between the External Auditors and management. The Corporation shall provide appropriate funding, as determined by the Committee, for payment of compensation to the External Auditors and any experts or advisors employed by the Committee.

The Committee shall meet with the External Auditors, as the Committee may deem appropriate, to consider any matter which the Committee or External Auditors believe should be brought to the attention of the Board or the Shareholder.

External Auditor Independence

The Committee shall review and discuss with the External Auditors all relationships that the External Auditors and their affiliates have with the Corporation and its affiliates in order to determine the External Auditors' independence, including, without limitation (i) requesting, receiving and reviewing, on a periodic basis, a formal written statement from the External Auditors delineating all relationships that may reasonably be thought to bear on the independence of the External Auditors with respect to the Corporation (ii) discussing with the External Auditors any disclosed relationships or services that the External Auditors believe may affect the objectivity and independence of the External Auditors, and (iii) recommending that the Board take appropriate action in response to the External Auditors' report to satisfy itself of the External Auditors' independence.

External Auditor Quality Control

In this respect, the Committee shall, at least annually, obtain and review a report by the External Auditors describing the auditing firm's internal quality-control procedures, any material issues raised by the most recent internal quality-control review or peer review of the auditing firm or by any inquiry or investigation by government or professional authorities within the preceding five years respecting one or more independent audits carried out by the External Auditors and any steps taken to deal with any such issues and all relationships between the External Auditors and the Corporation.

Internal Audit

Reports of Internal Audit (Timetable Item 3c)

The Committee will review audit reports issued by Internal Audit, management's response and subsequent follow-up of identified weaknesses.

In order to focus on key risk areas, the Committee will only review the full audit report for reports identified as high risk by Internal Audit. However, executive summaries will be reviewed for all reports issued and the Committee will be provided with low and medium risk internal audit reports upon request.

Meeting with the Director, Audit Services

The Committee Chair will meet with the Director, Audit Services in advance of each quarterly Committee meeting to discuss all items to be presented. During quarterly Committee meetings, the Committee shall meet with the Director, Audit Services, without management present.

General

The Committee shall, in consultation with senior management, review the performance of the Audit Services department. The Committee shall also review and approve, in consultation with senior management, proposed changes in the position of the Director, Audit Services.

In addition, the Committee shall, from time to time, assure itself that the internal audit function has adopted recognized standards such as the Institute of Internal Auditors International Professional Standards.

Pension

In addition to the items specified on the Committee Timetable, other Pension Plan related matters as follows are to be addressed by the Committee as required:

a) Monitoring the health of the Pension Plan (including holding periodic tutorials)
b) Approve changes to the British Columbia Hydro and Power Authority Pension Plan Funding Policy
c) Make recommendations to the Board respecting plan design, benefit levels, investment policies, etc.
d) Review actuarial valuation and assumptions
e) Recommend pension fund asset allocation to Board (as required)
f) Review and recommend to the Board of Directors the appointment and termination of investment managers, actuaries, fund holders, administrators, External Auditors, and investment managers

Accountability

At every quarterly meeting of the Board, or more often if required, the Committee shall provide a report on its deliberations and recommendations since its last such report. Minutes of the Committee's meetings will also be made available to all Directors on request.

TERMS OF REFERENCE
CUSTOMER SERVICE, OPERATIONS & PLANNING COMMITTEE

Strategic Context

The work of the Customer Service, Operations and Planning Committee (the "Committee") is directly linked to BC Hydro's company-wide goals. Specifically, to make it easy for customers to do business with BC Hydro, to achieve the highest level of energy conservation and to continuously improve the way the company plans and operates its business.

Purpose

The purpose of the Committee is to assist the Board of Directors in providing strategic and policy level advice and direction to Management on matters that drive customer service, guide long term planning or support company-wide operations. These may include, but are not limited to, key operational activities, planning, resource management, regulatory matters, energy conservation, technology, safety and the environment.

Composition

The Committee will be composed of not less than three Directors.
The Corporate Secretary will be secretary to the Committee.

Duties and Responsibilities

In delivering on its purpose, the Committee will from time to time engage in the following activities or perform the following duties. The frequency of the Committee's engagement with these activities and duties will be determined based on project timelines, government expectations, evolving circumstances and emerging issues. In some cases these are predetermined and specified in the Committee Timetable. Other functions related to the Committee's purpose shall be performed as they are deemed necessary.

a) Make recommendations to the Board with respect to the Corporation's goals and targets on matters falling within its purpose;
b) Provide advice and direction with respect to strategies, plans and objectives;
c) Review initiatives and expenditures related to the Committee's mandate and provide the Board of Directors with a recommended course of action where applicable;
d) Review and monitor programs and performance, as appropriate; and
e) Ensure that principal risks associated with its mandate are appropriately identified and managed.

Accountability

At every quarterly meeting of the Board, or more often if required, the Committee shall provide a report on its deliberations and recommendations since its last such report. Minutes of the Committee's meetings will also be made available to all Directors.

Committee Timetable

		Q1 (May)	Q2 (Aug)	Q3 (Nov)	Q4 (Feb)
1	Service Plan Targets			Recommend	
2	Annual Technology Plan		Review		
3	Annual Safety Plan				Review
4	DSM Plan			Approve	
5	DSM Plan Performance (even numbered fiscal years)			Review	
6	Committee Terms of Reference			Review	

TERMS OF REFERENCE
CUSTOMER SERVICE, OPERATIONS & PLANNING COMMITTEE

Strategic Context

The work of the Customer Service, Operations and Planning Committee (the "Committee", or "Operations & Planning Committee") is directly linked to BC Hydro's company-wide goals. Specifically, to make it easy for customers to do business with BC Hydro, to explore the full potential of energy conservation, and to continuously improve the way the company plans and operates its business.

Purpose

The purpose of the Committee is to assist the Board of Directors in providing strategic and policy level advice and direction to Management on matters that drive customer service, guide long term planning or support company-wide operations.

These include, but are not limited to, key operational activities, planning, asset health, capital planning, resource management, regulatory matters, energy conservation, technology, emergency management, safety and the environment.

With respect to asset health, the Committee will inquire into the processes in place to monitor and assess the condition of the Corporation's major assets, the adequacy of resources in place to ensure the safe and reliable operation of the Corporation's major assets in the context of acceptable risk parameters, and the Corporation's asset management practices, ensuring that they remain effective and current in the context of industry practices and standards.

With respect to capital planning, the Committee will also monitor and oversee the capital planning process to ensure appropriate management of asset risk and allocation of resources, and review long-term capital plans, including underlying assumptions and methodologies, ensuring that they adequately reflect the risks and priorities associated with asset health.

Composition

The Committee will be composed of not less than three Directors. Where practicable, the Chair of the Capital Projects Committee will serve on the Committee to facilitate the oversight of related but distinct mandates.

The Corporate Secretary will be secretary to the Committee.

Duties and Responsibilities

In delivering on its purpose, the Committee will from time to time engage in the following activities or perform the following duties. The frequency of the Committee's engagement with these activities and duties will be determined based on project timelines, government expectations, evolving circumstances and emerging issues. In some cases these are predetermined and specified in the Committee Timetable. Other functions related to the Committee's purpose shall be performed as they are deemed necessary.

a) Make recommendations to the Board with respect to the Corporation's goals and targets on matters falling within its purpose;
b) Provide advice and direction with respect to strategies, plans and objectives;

c) Review initiatives and expenditures related to the Committee's mandate and provide the Board of Directors with a recommended course of action where applicable;
d) Review and monitor programs and performance, as appropriate; and
e) Ensure that principal risks associated with its mandate are appropriately identified and managed.

Accountability

At every quarterly meeting of the Board, or more often if required, the Committee shall provide a report on its deliberations and recommendations since its last such report. Minutes of the Committee's meetings will also be made available to all Directors.

Committee Timetable

		Q1 (May)	Q2 (Aug)	Q3 (Nov)	Q4 (Feb)
1	Service Plan Framework and Metrics			Review	
2	Annual Technology Plan		Review		
3	Annual Safety Plan				Review
4	10 Year Capital Plan			Review	
5	Capital Budgets			Review[1]	~~Recommend (January)~~
6	Asset Condition Update (T&D and Generation)		Review (T&D)	Review (Gen)	
7	Regulatory and Business Planning Calendar				Review
8	DSM Plan			Review	
9	DSM Plan Performance (odd numbered fiscal years)			Review	
10	Risk Report	Review	Review	Review	Review
11	Committee Terms of Reference	Review			

[1] Final approval of Capital Budgets for inclusion in the Service Plan rests with the Board in January following Q3 review of the 10 Year Capital Plan.

BC HYDRO IT&T GOVERNANCE

PURPOSE

The purpose for the IT&T governance structure is to ensure that the information technology and telecommunications solutions are enabling the business to meet its goals and objectives.

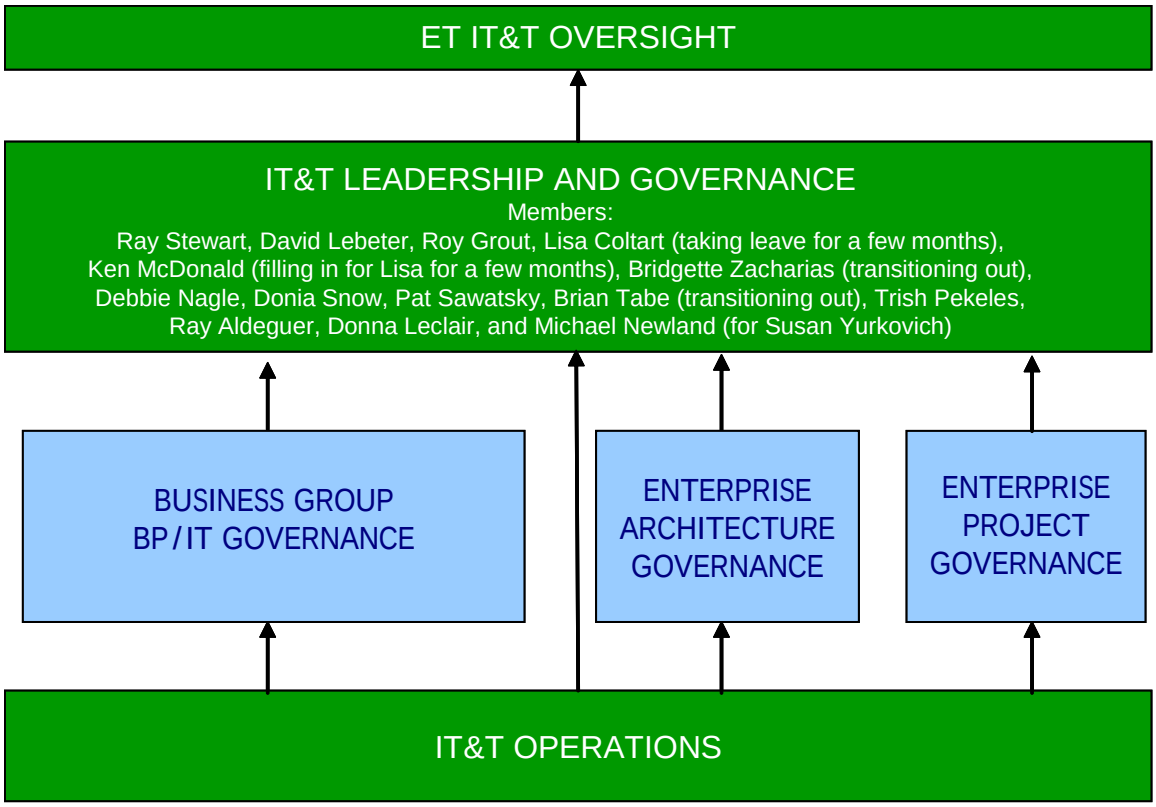
We are doing the right things, the right people are doing the work at the right time and that we are investing in the right way. The IT&T strategy defined a number of key principles. We are currently finalizing the underlying architectures that will guide and direct the delivery of IT&T solutions.

The scope of the IT&T governance includes business process solutions, change management activity, and information technology and telecommunications solutions.

The governance also oversees the links and dependencies with the business strategy, operational technology strategies (e.g. smart grid, SCADA, substation, transmission and energy systems) and relationships with partners such as BCTC.

GOVERNANCE STRUCTURE

IT&T governance requires different levels of the organization to oversee the investment of IT&T solutions to ensure they enable the short, medium and long-term objectives of BC Hydro customers and business. Each level has different timeframes, investments, benefits, outcomes and risk management.



BC HYDRO IT&T GOVERNANCE

ET IT&T OVERSIGHT

ET oversight addresses the longer-term objectives, investment with assurance that the solutions are meeting the enterprise business needs over a longer period. It defines the magnitude of investment (1-3% of revenue), where the investment should go (run, grow, transform percentages), overall priorities and directions.

Key responsibilities are:

- Approve the multi-year investment
- Oversee the multi year impact on the organization
- Oversee the business cases and benefits
- Approve the multi year IT&T strategy
- Oversee the interdependencies with other business and technology strategies
- Report to ARMC and Board

Members include the senior executive team and receive updates and reports from the CIO. It is chaired by the CFO.

Meetings are held quarterly and have a standing agenda.

IT&T LEADERSHIP AND GOVERNANCE

The IT&T leadership and governance looks at the medium term (1-3 years) needs and ensures the right resources are working on the right projects and work and are delivering the right solutions to the enterprise and business groups. Particularly, it is paying attention to the prioritization and interdependency of all the IT&T initiatives.

The IT&T leadership group's mandate is to provide oversight with respect to ensuring the investment of the IT&T asset enables and supports the business. The group represents all areas of the organization and has decision-making authority over the capital and operational investment in IT&T. This includes IT&T projects and operations.

It is a decision making body with respect to business process and technology solutions, prioritizations, resource management, and investment.

Key responsibilities are:

- deliver the business benefits
- ensure solutions reflect the cross-functional and business group processes
- manage the interdependencies of the major initiatives
- ensure the resources have been prioritized to meet the organizations' needs
- oversee the risks of projects and operations

BC HYDRO IT&T GOVERNANCE

- approve the annual investment plans (capital and operating) and oversee actual expenditures
- approves updates to the IT&T strategy and architectures. Significant changes may occur in the multi-year plan and will be approved by the ET IT&T Oversight
- ensure policies, standards and frameworks are defined and delivered upon
- understand the future technological directions and solutions

Members include senior management from all business groups and is chaired by the CIO.

Meetings are held monthly and have a standing agenda.

BUSINESS GROUP – BP / IT GOVERNANCE

The business group governance focus their attention on the business process and technology solutions, impacts, resources and priorities as they relate to their business. They oversee the outcomes, the resources and change management aspects of the IT&T initiatives. The business groups provides oversight as to how they deliver solutions into their business, what the business group priorities are, how they deliver change to the organization and how resources are allocated.

The BIS manager should lead this governance group comprised of business leaders from the business units.

ENTERPRISE ARCHITECTURE GOVERNANCE

The enterprise systems governance focus their attention on the impacts, resources and priorities as they relate to the solutions being implemented that affect the entire organization. Examples of these solutions include SAP, Microsoft office, filenet solutions, security, etc. They oversee the outcomes, investments, timing, priorities, and adherence to these solutions. This group has been in place for the past 6 months but has not yet been formalized into an architecture review group yet.

Members consist of CIO architecture teams and BIS managers.

PROGRAM / PROJECT GOVERNANCE

The program / project governance focus their attention on the enterprise projects that affect the full organization. This includes cross-functional business processes, technology solutions, impacts, resources and priorities as they relate to their business. They oversee the outcomes, the resources and change management aspects of the IT&T initiatives. They oversee the project scorecard, maintain the rolling 12-month resource plan and maintain the monthly budget and actuals for the projects. This group is currently operating.

BC HYDRO IT&T GOVERNANCE

Members include The CIO's PMO office, Project leads on the projects and BIS Managers.

IT&T OPERATIONS

IT&T operations are led by the Service Delivery Director and are supported by working groups from the business. It is the responsibility of this group to define and deliver the services for IT&T projects and operations. It works with the BIS managers to ensure the business is receiving the services they need to run the business.

BC HYDRO IT&T GOVERNANCE

IT&T LEADERSHIP GOVERNANCE STANDING AGENDA

STRATEGIES AND PLANS
- IT&T strategy review
- Business process architecture
- Technology architecture

GENERAL MANAGEMENT
- ET review
- Governance review
- Practices and policies
- Metrics and measurements
- Organization – CIO, business groups

PROJECT MANAGEMENT
- Top 10 projects
- Initiatives coming up / possible
- Business group projects

OPERATIONS MANAGEMENT
- Service Delivery
- Partners and contracts

RESOURCE MANAGEMENT
- Total resource review
- ABS resource review
- Business Group resource review

RISK MANAGEMENT
- Interdependencies
- Delivery risks
- Resource risks
- Financial risks

FINANCIAL MANAGEMENT
- Capital plan
- Operating plan budget/commitments/actuals

THE FUTURE
- Topic on the future
- Industry activity

PROFILES
- People
- Solutions
- Projects
- Services

ACTIONS
- Summary of actions and issues

NEXT MEETING
- Second Friday of the month

PURPOSE

The establishment of the Technology Governance group is to ensure that technology and security are enabling BC Hydro to achieve its goals and objectives.

It is to provide oversight and direction of the strategy, planning and delivery of all technology assets and security for BC Hydro as an enterprise as well as for the individual business units. This means meeting current business objectives and future proofing for our evolving business.

It is a decision making body.

TECHNOLOGY & SECURITY GOVERNANCE

The Technology & Security Governance is responsible for the oversight of how BC Hydro utilizes technology to meet the strategic objectives of the company and to ensure security for our people, places and assets.

- ✓ **Safely Keep the Lights On:** technology and security that enables reliability in our system and work environment and provides the most effective use of our technology assets.
- ✓ **Mind Our Footprint**: technology and security that enables conservation and operates in the most environmentally manner.
- ✓ **Succeed through Relationships:** leadership in the advancement and use of technology and security related to the electrical energy business by utilizing partners and suppliers.
- ✓ **Foster Economic Development:** technology and security that provides the opportunity to utilize industry partners across the province.
- ✓ **Maintain Competitive Rates:** technology and security that is supporting operational excellence and is efficient in producing and distributing energy.
- ✓ **Engage a Safe & Empowered Team:** Our workforce is enabled and supported by technology and security that is built and delivered with safety and operational excellence in mind.

This includes oversight to the development of long term plans and the development and operations of technology and security to meet the short and medium objectives. It is equally critical to the organization that the technology and security are not only effective today but that they also provide for future proofing. Oversight includes the investment and business value of the technology and security to ensure the One Hydro goals are met. Key responsibilities are:

- ♦ Approve the multi-year technology and security strategy
- ♦ Approve the multi-year investment for technology and security
- ♦ Oversee the multi-year impact on the organization
- ♦ Oversee the use of the technology and security assets and people
- ♦ Oversee risk management related to the technology and security
- ♦ Oversee the policy, standards and frameworks are addressed
- ♦ Oversee the business cases and benefits for technology and security
- ♦ Oversee the interdependencies with other business strategies
- ♦ Report to ARMC and Board

Confidential & draft

Members include the senior executive team. The current Chair is Don Stuckert, Vice President of Technology and Security. Meetings will initially be held monthly.

TECHNOLOGY & SECURITY SCOPE

The scope for the Technology & Security Governance group is for all technology and security assets and people within BC Hydro. The breadth of technology and security is broad and all pervasive in BC Hydro and the utility industry in general. The technology and security are becoming very integrated and oversight across all technology and security aspects is important.

The technology scope includes:

1. **Transmission technologies:** Current and new technologies related to the movement of energy transmission from generation facility to substation including structures, storage, sensors and measuring devices, protection technologies, power equipment, ROW management technologies, and operating technologies to manage the power flow.

2. **Distribution technologies:** Current, emerging and future technologies related to the movement of energy including structures, storage, sensors and measuring devices, protection technologies, power equipment on the distribution network (from end point to substation), and operating technologies (end devices) to manage the power flow.

3. **Customer Technologies:** Current, emerging and future technologies related to end-use of electricity. Scope covers behind-the-meter technologies including home/building energy-use efficiency technologies, electric vehicles, and end-user energy management systems.

4. **Information & telecommunications technologies:** Current, emerging and future technologies related to the end to end business process and systems, software, hardware, mobile and end user devices, telecommunications, security and data management. This technology addresses the needs across the full company.

5. **Generating technologies:** Current, emerging and future technologies related to the generation of energy. Scope includes hydro, wind, solar, biomass, marine, fuel cells, and other distributed generation within the scope of BC Hydro and related operating technologies to power generation.

The security scope includes:

1. **Electronic security**: Current and new technologies and practices related to securing our assets, facilities and people. Scope includes devices, identity management, databases and systems.

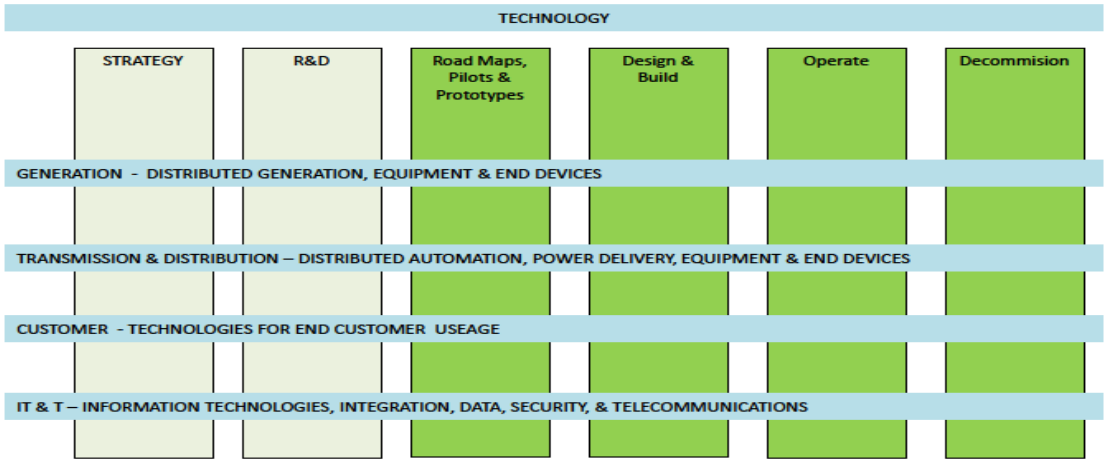
2. **Physical security:** Current and new practices, physical equipment and people related to securing our assets, facilities and people. Scope includes guard services, physical components, and command and control environments.

3. **Security policies and compliance:** Current and new practices related to policies and NERC compliance appropriate for our business, WECC and the North American utility industry.

confidential & draft

TECHNOLOGY LIFECYCLE SCOPE

Technology has a large and complex lifecycle. The steps in the lifecycle include:



Strategy: Long term (10+ years). Includes emerging and future technologies.

Research & Development: Mid-term (5-10+ years). Includes investigations into technical solutions, execution of demonstration projects, development of standards, and industry participation.

Roadmaps, Prototypes & Pilots: Mid to short term (1-5 years). Includes develop business unit plans or roadmaps for the technology streams, participate in the development standards and in industry groups and participate in pilots and prototypes.

Engineering & Design: Current (1- 5 years). Includes engineer and design technology solutions, operationalize standards and participate in industry activity.

Build: Current. Build and implement the technology solutions and operationalize the standards and participate in industry activity.

Operate: Current. Operate the technology.

Decommission: Decommission and dispose of the technology assets.

TECHNOLOGY MANAGEMENT SCOPE

The roles of the different groups are:

Lifecycle Phase	Primary	Participation
Strategy	CTO	Business Unit
R&D	CTO	Business Unit

Roadmaps, Prototypes & Pilots	Business Unit
Engineer & Design	Business Unit
Build & implement	Business Unit
Operate	Business Unit
Decommission	Business Unit

Design & Engineering:	Business units responsible for their technology scope. Note: IT&T currently delivers all IT&T work along with generation and customer operating technologies.
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IT&T: Delivery of information technology and telecommunications across the organization, generation operating technologies, customer technologies and participates in strategy and R&D.

CTO: Delivery of the corporate technology strategy, management of technology roadmap, and management of research and development for the organization across the technologies.

confidential & draft

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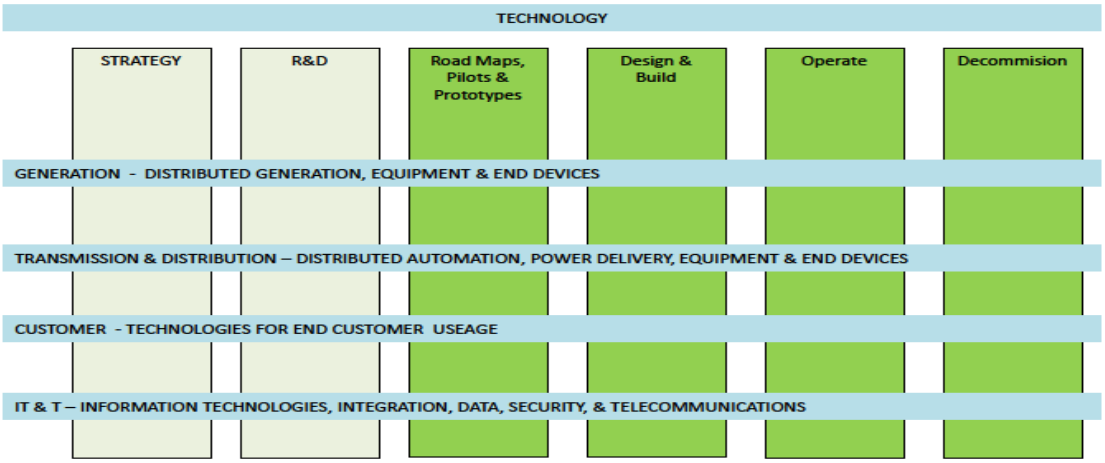

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BC HYDRO – PRINCIPLES FOR PROCESS AND SYSTEMS INITIATIVES

1. **Business strategy drives business process design**
   The business operations strategy and objectives drive the business process architecture. They define the metrics to which the processes must deliver to. Conservation results, cost efficiencies, operable efficiencies, and maximizing the team metrics must be enabled by the business process and technology.

2. **Business process is defined both in terms of enterprise and business groups**
   Each business process can be defined as meeting enterprise and business group needs. They can have different levels of design ranging from 100% business group driven to 100% enterprise driven base upon what meets the needs of the enterprise **and** business group. When analysing our business processes, we will define how much affects the enterprise and the business group. For example, an employee expense process might be 100% enterprise designed whereas a work scheduling process might be 60% the same across the enterprise and 40% specific to a business group.

3. **End to end business process design**
   Each business process will be looked at from "source' to "source". For example, end customer self service is integrated into the process so information is delivered, processed at source of creation.

4. **Business process design drives the IT&T plan**
   The cross functional business processes designed for the future business drives the development of the IT&T architecture. The IT&T architecture includes: user access, applications, information/data, infrastructure and telecommunications.

5. **80/20 rule**
   Deliver solutions that will meet 80% of the business process needs. While we seek a very high quality of solution, we know that customer need, time and dollars must be met.

6. **Design for "Tool Time"**
   Most business processes have a "transactional" nature to them. Most of the transactional processing can be enabled by technology. This will free up our team to spend time on getting the job done and on knowledge-based work.

7. **Single source of information**
   Incorporate single source of "truthful" information. We may replicate that data in order to be to meet business process needs but will stand behind a single truth.

8. **Test & validate current IT&T investments**
   Test and validate the current IT&T investments first to solve the business process needs. In the event that the current IT&T architecture cannot deliver to the business needs in an effective and efficient way, we will look to buy/obtain proven technologies. We will leverage "bleeding edge" technology only in an applied R&D environment.

9. **Short and long term strategic investments**
   In order to keep operating and improving the business it is necessary to implement incremental improvements. These would be considered short term improvements that would be implemented and have paybacks attained in 1-3 years. They may be replaced by the longer term strategies in the 3+ year's time frame.

10. **Consistent and effective governance**
    Overall governance of the IT&T investment ensures we utilize the resources in the most effective manner for the overall organization. Having a governance structure to set priorities, oversee the allocation of resources, address the interdependencies of the project work and provide oversight to the operations provides a foundation for success.

Technology Governance Committee
Terms of Reference
August 2015

Purpose

The purpose of the Technology Governance Committee (the "Committee") is to provide oversight of the strategy, planning, design, delivery, operations, support and management of BC Hydro's information and telecommunications technologies ("IT"). The Committee is charged with ensuring that the IT strategy is aligned with BC Hydro goals, that investments in IT are prudent and well planned, that IT initiatives are efficiently managed and delivered, and that expected benefits are realized.

Scope

The scope of the Committee covers all aspects of IT managed by the Technology group and includes data, infrastructure, applications, telecommunications, and cyber security. The scope includes not only the planning and operational functions of the Technology group but also includes oversight of any and all initiatives throughout the organization that involve major IT investments.

Responsibilities

The Committee's key responsibilities include,

a) Approval of the annual Technology Work Plan and budgets.
b) Approval of the 5 Year Technology Plan
c) Approval of the 10 Year Capital Plan for Technology
d) Oversight of business cases for all BCH initiatives that include IT investments greater than $3M
e) Review Projects over $5M prior to implementation phase
f) Oversight of policies, standards, functions, processes, and compliance related to IT
g) Oversight of risk management related to IT

Chairman

The Chairman of the Committee shall be the Executive VP of Transmission, Distribution, and Customer Service - who has direct accountability for the Technology group.

Membership

The Committee shall be comprised the Chair plus no fewer than 4 members of the Executive Team (appointed by the Chair) and the CIO.

Current Members

Greg Reimer (Chair)	EVP Transmission, Distribution, and Customer Service
Chris O'Riley	Deputy CEO
Cheryl Yaremko	EVP Finance & Supply Chain and CFO
Mark Poweska	SVP Generation
Debbie Nagle	SVP & Chief Human Resources Officer
Kip Morison	CIO

Frequency and Duration of Meetings

Meetings shall be held once a month with a normal duration of 2 hours.

Quorum

A simple majority of the Executive Team members on the Committee shall constitute a quorum.

Delegation

Executive Team members of the Committee may not delegate their duties on the Committee. The CIO and other members of the committee may delegate their duties as needed and as permitted by the Chairman.

Meeting Guests

Guests may be invited by any Committee member to attend specific Committee meetings to address specific agenda items. Unless otherwise allowed by the Chairman, guests shall attend only the portion of the meeting that is dealing with their agenda item.

Agendas and Materials

An annual standing agenda shall be produced and approved by the Chairman showing specific key topics to be covered during each of the meetings during the year.

A draft agenda for each meeting shall be submitted for approval to the Chair no later than 1 week prior to the meeting. The final agenda and associated meeting materials will be made available to all Committee members no later than 3 business days prior to the meeting.

Minutes

The Chairman shall appoint a scribe for each meeting to record meeting minutes that shall include a summary of action items and decisions.

Reporting

- Following each meeting, draft minutes will be provided to every committee member for review. Final minutes will be issued to each member in a timely manner.
- An email summary of each meeting, along with a copy of the full final minutes will be provided to the full Executive Team.

Technology Governance Committee

Terms of Reference

November 2015

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Responsibilities

The Committee's key responsibilities include,

a) Approval of the annual Technology Work Plan and budgets.
b) Approval of the 5 Year Technology Plan
c) Approval of the 10 Year Capital Plan for Technology
d) Oversight of major IT projects (see below)
e) Oversight of policies, standards, functions, processes, and compliance related to IT
f) Oversight of risk management related to IT

Project Oversight

Projects with total costs at or above $6M shall be brought to the Committee for *information* prior to transition to Identification, Definition, and Implementation phases

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Ray Aldeguer	SVP Corporate Services & General Counsel
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BC Hydro
Power smart

Executive Team Mandate
for
Review & Approval of Technology Initiatives
July 20, 2016

The Executive Team shall,

(a) Approve annual Technology deliverables including,
- Annual Technology Work Plan: Capital & OMA Portfolios
- 5 Year Technology Strategic Plan

(b) Approve Technology strategic initiatives with significant enterprise impact
Examples
- *Delivery Model Strategy*
- *Cyber Security Strategy & Plan*
- *Business Continuity Management Plan*
- *Risk Management Plan*
- *Records Management Policy*

(c) Approve
- IT projects with an estimated total cost >$6M. Approval is required for transition to each major phase (Identification, Definition, Implementation), changes requiring an EAR revision, access to Executive Manage Reserve funds, cancellation, deferral, or policy exemption. This shall apply for all IT projects regardless of the funding source, including those receiving funding or benefits via the Revised Amended Master Services Agreement (RAMSA).
- Other major projects that are of interest identified by the Executive Team or the CIO

(d) Approve items going to the Board

(e) Review the progress of Technology initiatives as requested by the Executive Team or CIO.

Technology shall provide ET with a monthly project dashboard report that discusses the status of all projects.

<u>Approval Process</u>

a) When approvals are required from the Executive Team, the ET Approval Form (attached) shall be provided at the end of the presentation and approval shall be documented through signing by the CEO and CFO. The signed form shall be attached to the material presented and retained as official record of the decision.

b) Approval by the Executive Team does not constitute fulfilment of policy compliance obligations. Prior to commencing any work on a project or initiative that has been approved by the Executive Team, the appropriate Project requirements (such as ITDSP) and Financial policy requirements must be fulfilled, including any written signoffs of business cases, Expenditure Approval Requests (EARs), or any other applicable documentation.

BC Hydro
Power smart

Executive Team Approval Form

This form is to be completed prior to the presentation to ET and signed at the time approval is given.

Date of Meeting	
Time	
Location	
ET members Present	☐ Jessica McDonald ☐ Chris O'Riley ☐ Greg Reimer ☐ Ray Aldeguer ☐ Cheryl Yaremko ☐ Janet Fraser ☐ Mark Poweska ☐ Hugo Shaw ☐ Teresa Conway
Others present	
Subject of Presentation	
Name of Presenter(s)	
Approval Given	
Material Presented (Attach to this form)	
Conditions of Approval	

Signatures

Jessica McDonald	**Cheryl Yaremko**
Date	**Date**

15.0 C. BC HYDRO APPROVAL AND OVERSIGHT CONTROLS AND PROCESSES

Reference: AUTHORIZATION AND GOVERNANCE
Exhibit B-3, Section 4.1, pp. 3-4, 30-31
Oversight of IT&T

BC Hydro further states on page 30:

Oversight of IT&T was provided by the Audit and Risk Management Committee (renamed the Audit and Finance Committee effective September 2011) until April 27, 2015, after which oversight was transferred to the Customer Service, Operations & Planning Committee (CSOPC)…

1.15.7 Please explain the drivers which led to each of the changes to the committee responsible for overseeing IT&T.

RESPONSE:

The change in committee overseeing IT&T was part of a broader restructuring of BC Hydro's Board committees. The objectives of this re-structuring were to align committee mandates with BC Hydro's strategic priorities; focus the Board on strategy, while supporting BC Hydro's organizational structure; and reduce the governance burden on the Board and management while maintaining appropriate oversight.

15.0 C. BC HYDRO APPROVAL AND OVERSIGHT CONTROLS AND PROCESSES

Reference: AUTHORIZATION AND GOVERNANCE
Exhibit B-3, Section 4.1, pp. 3-4, 30-31
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1.15.8 Please provide the following information regarding IT&T-related change management:

i. What areas of change management are monitored in the oversight of IT&T?
ii. How is IT&T-related change management implemented?
iii. Are the change management processes and procedures well understood across the IT&T organization?
iv. Who is involved in IT&T-related change management?

RESPONSE:

At BC Hydro, change management is overseen by the Enterprise Change Management group. The main focus of change management on IT projects is to work effectively through required changes so as to realize project objectives and expected benefits. Change management is an integral part of delivering project objectives and expected benefits.

The Technology PMO works closely with Enterprise Change Management to align ITDSP with the change management framework as it relates to IT projects.

i. During the Identification phase, as the business requirements and the recommended solution are finalized, a business process impact assessment is conducted to determine the business processes that will be newly introduced or changed as a result of the project. This information is used to estimate the change management effort required during the next phase. In the Definition phase, a stakeholder analysis and change impact assessment are conducted to determine the change management effort that will be required during the Implementation phase. Based on this assessment a change management plan is created. The change management plan is executed during the Implementation phase. This plan will include areas such as mobilizing the

organization (change leadership), communication and training activities as needed for each project. The status of change management activities on a specific project is assessed through monthly status reports. Change Management teams also make periodic updates to Steering Committees for their projects.

ii. Change management deliverables are included in the ITDSP framework tailoring as appropriate for each project. The deliverables tailored for the project are completed within the appropriate phase and verified at the gate at the completion of the respective phase. Communications and training related deliverables are further validated within the Implementation phase, at the project Go Live gate review.

iii. The expectations related to change management processes and procedures are reviewed with all IT project managers as part of the onboarding process. Each project manager receives further guidance on specific projects through the ITDSP tailoring activities for the project. The IT project managers are accountable to ensure the project team members involved in change management activities are familiar with BC Hydro expectations. The Enterprise Change Management Lead is a member of the ITDSP Gate Review Board, is expected to be engaged early on in the project lifecycle to confirm the expectations with the IT project manager, and provides change management deliverables sign-off as part of the gating process.

iv. The key roles in change management activities for IT projects are: the Project Sponsor, Project Initiator and Business Lead, acting as champions and change leaders for the project, the Enterprise Change Management Lead (refer to iii. above), the assigned Change Manager in the project team, and other resources such as Process Architects and Business Analysts as appropriate.

15.0 C. BC HYDRO APPROVAL AND OVERSIGHT CONTROLS AND PROCESSES

Reference: AUTHORIZATION AND GOVERNANCE
Exhibit B-3, Section 4.1, pp. 3-4, 30-31
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1.15.9 Aside from the EAR, business case and Project Completion and Evaluation Report (PCER), are there other control mechanisms are in place to oversee IT&T? If yes, please describe these other control mechanisms.

RESPONSE:

Monthly financial reports of Technology spend and forecasts are prepared by the Finance and Technology groups and are another financial and project management control mechanism.

BC Hydro notes that several IRs relate to the control mechanisms in place for the oversight and governance of IT&T projects. For example, please refer to also BC Hydro's response to BCUC IRs 1.17.5 and 1.21.1.

15.0 C. BC HYDRO APPROVAL AND OVERSIGHT CONTROLS AND PROCESSES

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1.15.10 Who is accountable for the accurate implementation of the controls? Is there a published and readily available inventory of controls? Please elaborate and provide samples.

RESPONSE:

Controls over IT project delivery are prescribed, defined, documented and administered by different groups:

- **The Finance group is accountable for financial controls (EARs, PCER, Monthly Technology Consolidated Capital Report);**
- **Technology PMO is accountable for IT&T project controls (ITDSP, Gate Reviews, Monthly Status Reports, Monthly PMO Scorecard, etc.); and**
- **Audit Services is accountable for internal audits.**

BC Hydro does not have a published inventory of all controls. In order to facilitate onboarding of Project Managers, BC Hydro has developed a Finance Policy Digest and Project Delivery Policy Digest that point to various requirements and polices, however they are not a formal inventory of controls.

15.0 C. BC HYDRO APPROVAL AND OVERSIGHT CONTROLS AND PROCESSES

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1.15.11 What types of measures of success are used? How are these measures calculated and/or collected? Who looks at the measures? What decisions can be made based on the measures? Who is accountable for the accuracy of measures?

RESPONSE:

BC Hydro interprets this question as asking about "measures of success" in relation to the controls specified in BCUC IRs 1.15.9 and 1.15.10. No specific types of measures of success are used to measure oversight of IT&T.

15.0 C. BC HYDRO APPROVAL AND OVERSIGHT CONTROLS AND PROCESSES

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1.15.12 What industry frameworks and standards does BC Hydro's IT&T subscribe to (e.g., COBIT5, ISO/IEC 20000, ITILv3, Prosci, TOGAF9, etc.)?

RESPONSE:

BC Hydro's Technology Group seeks to align its IT operations with ITILv3.

BC Hydro's IT&T has been referring to industry standards and frameworks as the basis for adopting best practices when developing diagnostic and prescriptive work products such as technology strategies, process maturity assessments, security requirements, architecture deliverables, service catalogues and operating procedures. These include COBIT, ITIL, TOGAF, Archimate & various ISO/IEC standards. It is not BC Hydro's objective to formally comply with any of these frameworks nor to assess standards adoption on a regular basis. BC Hydro IT&T uses these frameworks fundamentally as guidance.

BC Hydro's IT Delivery Standard Practices (ITDSP) was originally developed in alignment with and modeled after Software Engineering Institute Capability Maturity Model (SEI SW-CMM) Level 3 Organizational Process Definition (OPD) process area.

BC Hydro Technology does not measure capability maturity against any of these frameworks and standards on a regular basis as no specific capability framework was formally adopted by BC Hydro.

BC Hydro Enterprise Change Management (ECM) uses the Prosci framework, which includes the ADKAR model. All ECM employees are Prosci certified within their first year in ECM. Prosci is included as one of the requirements for contractors when we go to market for change management professionals.

Some of the listed standards (for example COBIT5 or 4.1) may be used by external parties or Audit Services when completing reviews or audits of the BC Hydro IT organization.

15.0 C. BC HYDRO APPROVAL AND OVERSIGHT CONTROLS AND PROCESSES

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1.15.12 What industry frameworks and standards does BC Hydro's IT&T subscribe to (e.g., COBIT5, ISO/IEC 20000, ITILv3, Prosci, TOGAF9, etc.)?

1.15.12.1 Does BC Hydro measure capability maturity against any of these frameworks and standards on a regular basis? Please elaborate.

RESPONSE:

Please refer to BC Hydro's response to BCUC IR 1.15.12.

15.0 C. BC HYDRO APPROVAL AND OVERSIGHT CONTROLS AND PROCESSES

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1.15.12 What industry frameworks and standards does BC Hydro's IT&T subscribe to (e.g., COBIT5, ISO/IEC 20000, ITILv3, Prosci, TOGAF9, etc.)?

1.15.12.2 Does BC Hydro leverage any of the controls and measures established by any of these frameworks (e.g., 34 control objectives of COBIT5: Key Goal Indicators and Key Performance Indicators)? If so, please elaborate and give examples.

RESPONSE:

Please refer to BC Hydro's response to BCUC IR 1.15.12.

15.0 C. BC HYDRO APPROVAL AND OVERSIGHT CONTROLS AND PROCESSES

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1.15.13 Does BC Hydro have currently established framework(s), guidance, policies and/or standards in place for investment prioritization, benefits realization management, and/or business process management? Please elaborate.

RESPONSE:

BC Hydro has an established process for IT investment prioritization based on a scoring methodology that considers value (defined as financial benefit, risk reduction or other business benefit), uncertainty (defined as the potential to achieve the benefit), urgency and availability of resources (financial and human).

BC Hydro's business case templates and guidance require the author to define the financial and other benefits expected from the investment. Implementation business cases are required to define immediate project success measures that are directly related to the expected benefits.

At the conclusion of all projects, a PCER is required, which refers to the achievement of the project success measures.

A benefits realization process is currently not in place to define, track and evaluate project outcomes through the governance channels. A significant amount of time is invested in business case development for projects. However, there is no formal benefits realization process to follow up and determine whether planned benefits as a result of the project are realized. The Technology group expects to develop a plan by March 31, 2017 and implement a benefit realization process by March 31, 2018, as noted in Attachment 23 of the Consolidated Information Filing.

15.0 C. BC HYDRO APPROVAL AND OVERSIGHT CONTROLS AND PROCESSES

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1.15.13 Does BC Hydro have currently established framework(s), guidance, policies and/or standards in place for investment prioritization, benefits realization management, and/or business process management? Please elaborate.

1.15.13.1 Have measures of success been defined for each? What are they? How are they tracked and reported on?

RESPONSE:

There are no measures of success defined for the investment prioritization process. BC Hydro is not aware of any organization that has defined measures of success for these types of processes.

BC Hydro's business case templates and guidance require the author to define the financial and other benefits expected from the investment. Implementation business cases are required to define immediate project success measures that are directly related to the expected benefits.

At the conclusion of all projects, a PCER is required, which refers to the achievement of the project success measures.

BC Hydro does not currently have a method for tracking benefits realization. Please refer to BC Hydro's response to BCUC IR 1.15.13.

15.0 C. BC HYDRO APPROVAL AND OVERSIGHT CONTROLS AND PROCESSES

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1.15.13 Does BC Hydro have currently established framework(s), guidance, policies and/or standards in place for investment prioritization, benefits realization management, and/or business process management? Please elaborate.

1.15.13.2 Who is involved in their implementation, application, measurement, reporting and review? Please provide examples of decisions or actions that are triggered by the results of measures.

RESPONSE:

Given BC Hydro's response to BCUC IR 1.15.13.1, this question is not applicable in respect of investment prioritization and benefits realization management.

BC Hydro's business case templates and guidance require the author to define the financial and other benefits expected from the investment. At each phase of a project, the business case is revised and re-approved by the Project Sponsor and steering committee. If the conditions of the project have changed such that the business case is no longer valid, the project can be deferred or cancelled.

Implementation business cases are required to define immediate project success measures that are directly related to the expected business outcomes, such as technical functionality. The measures of success reflect the scope of the project that is expected to generate business outcomes. As per Project Management Guidelines, the project manager is responsible to manage the project scope, schedule and budget to the approved business case and report on the status of business case deliverables to the PMO and steering committee.

At the conclusion of all projects, a project closure report is required which refers to the achievement of the project success measures at that time. The project closure report is reviewed and approved by the PMO, project steering committee and sponsor.

The achievement of expected business outcomes is often not measurable immediately at project completion and requires a benefits tracking methodology and process to track benefits metrics over time. As noted in BC Hydro's response to BCUC IR 1.15.13, BC Hydro does not currently have a benefits tracking process.

16.0 C. BC HYDRO APPROVAL AND OVERSIGHT CONTROLS AND PROCESSES

Reference: AUTHORIZATION AND GOVERNANCE
Exhibit B-3, Section 4.2.1, p. 34
Business case requirements

BC Hydro states on page 34 of its Consolidated Information Filing:

A business case is required for any project (or initiative) greater than $1 million requiring investment, expenditure or commitment that has significant impact on business operations, creates material risk and/or where there are credible alternatives to a recommended course of action.

1.16.1 How are “credible alternatives” defined?

RESPONSE:

A business case is required for all IT projects.

If there are credible alternatives, these will be recorded in the Definition phase business case. Credible alternatives are identified through the Identification phase of IT projects. Alternatives are discussed among the business and technology stakeholders and assessed against the business objectives. Credible alternatives are those that meet enough of the objectives to achieve a business case. Credible alternatives are analysed using a structured decision making approach in which the alternatives are scored against specific criteria including expected business outcomes and benefits, alignment to strategy, costs, and risks.

16.0 C. BC HYDRO APPROVAL AND OVERSIGHT CONTROLS AND PROCESSES

Reference: AUTHORIZATION AND GOVERNANCE
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A business case is required for any project (or initiative) greater than $1 million requiring investment, expenditure or commitment that has significant impact on business operations, creates material risk and/or where there are credible alternatives to a recommended course of action.

1.16.2 What criteria are used to assess recommended/default options against alternatives? Is cost a factor used to assess options?

RESPONSE:

All credible alternatives, including recommended/default options, are analysed using a structured decision making approach in which the alternatives are scored against specific criteria including expected business outcomes and benefits, alignment to strategy, costs, and risks.

Cost factors, including implementation and sustainment costs, are included in the assessment. In particular, the estimated costs over the life of the asset are considered, including software licence, hardware, system maintenance, and support costs.

In addition to cost factors, alternatives analysis will typically consider an alternative's architectural fit (e.g., alignment to IT standards and strategy), alignment to corporate strategy, and project and sustainment risks. Recommended/default options will score highly on architectural fit, however all factors are taken into consideration, including cost, when selecting a recommended alternative.

16.0 C. BC HYDRO APPROVAL AND OVERSIGHT CONTROLS AND PROCESSES

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Business case requirements

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1.16.3 What forms of analysis are used in selecting options? Please elaborate.

RESPONSE:

The structured decision making approach takes the form of a consequence table in which all criteria are identified and alternatives scored against them. These criteria fall into four categories: benefits, strategic alignment, risk, and cost.

- **Benefits can be financial, non-financial but quantifiable, or non-quantifiable;**
- **Strategic alignment considers architectural fit (e.g., alignment to IT standards and strategy) and alignment to corporate strategy;**
- **Risk includes concepts of certainty in achieving business outcomes, technology maturity and ability to deliver; and**
- **The total cost of ownership over the period of benefits realization is considered, including software licence, system maintenance, and support/help desk costs.**

Criteria may or may not be weighted and may or may not be scored or assessed using a qualitative measure such as High, Medium or Low.

Overall assessment is made using best judgement to weigh cost and risk against benefit and strategic fit for each alternative.

The initial assessment is made by the project team including business and technology stakeholders. It is reviewed by the steering committee and other governance bodies as required.

16.0 C. BC HYDRO APPROVAL AND OVERSIGHT CONTROLS AND PROCESSES

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1.16.4 Does a record exist of all alternatives considered that did not succeed based on analyses and/or lower scoring based on criteria? Please explain.

RESPONSE:

All credible alternatives analysed using the structured decision making process are recorded in the Definition phase business case.

16.0 C. BC HYDRO APPROVAL AND OVERSIGHT CONTROLS AND PROCESSES

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1.16.5 Who is involved in determining that alternative options being investigated are valid and applicable? What oversight exists in determining the validity of business case justifications?

RESPONSE:

The business and technology project team and stakeholders are involved in the discussion, analysis and review of the alternatives analysis as documented in the business case. The initial assessment is made by the project team including business and technology stakeholders. It is reviewed by the steering committee and other governance bodies as required.

Oversight of the validity of business case justifications is provided through the review and approval process. Business cases are reviewed and approved by stakeholders identified at the start of the business case development process. The Project Initiator is responsible for the content put forward and the Project Sponsor is accountable. Oversight may include a steering committee and other governance bodies as required.

16.0 C. BC HYDRO APPROVAL AND OVERSIGHT CONTROLS AND PROCESSES

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1.16.6 Is independent advice sought in the preparation and/or validation of business case content? Please explain.

RESPONSE:

No. External independent validation is not sought for IT business cases.

In some cases external advice is sought in preparation of business cases and validation of assumptions is requested with regard to the market or technology solutions. However, this is not considered to be "independent" advice in the sense that it is provided within the context of a request from BC Hydro.

16.0 C. BC HYDRO APPROVAL AND OVERSIGHT CONTROLS AND PROCESSES

Reference: AUTHORIZATION AND GOVERNANCE
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1.16.7 What function does the Business Case have in project delivery?

RESPONSE:

The Business Case is the justification for the investment and is combined with the EAR for the application of funds with which to deliver projects. A Business Case and EAR are required at the beginning of each phase of a project.

The Business Case is a point in time record of the problem to be addressed, the expected business outcomes, the alternatives assessed, and the costs and risks associated with the project, etc. However, the Business Case is not a tool for project delivery. Rather, standard project management tools, procedures and deliverables are used to manage project delivery.

16.0 C. BC HYDRO APPROVAL AND OVERSIGHT CONTROLS AND PROCESSES

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1.16.8 Is the Business Case used/revisited to measure, track and report on the success or failure in achieving the expected business outcomes? Please explain.

RESPONSE:

Please refer to BC Hydro's response to BCUC IR 1.16.7.

17.0 C. BC HYDRO APPROVAL AND OVERSIGHT CONTROLS AND PROCESSES

Reference: AUTHORIZATION AND GOVERNANCE
Exhibit B-3, Section 4.2.2, pp. 34-35
Expenditure authorizations

BC Hydro states on page 34 of the Consolidated Information Filing:

BC Hydro's MAPP 1.2.1B.3 EAR describes the purpose and function of an EAR, which is a control document used for obtaining authorization for initiative expenditures and commitments exceeding $100,000…

…An EAR is required to commence the Definition Phase of a project. A single EAR is prepared for each identifiable project.

1.17.1 Please explain who is involved in assisting the initiator of a project with preparing an EAR.

RESPONSE:

BC Hydro's Finance group, informed by the accompanying business case, is accountable for completing the Expenditure Authorization Request (EAR) form with assistance from the Project Manager as needed.

17.0 C. BC HYDRO APPROVAL AND OVERSIGHT CONTROLS AND PROCESSES

Reference: AUTHORIZATION AND GOVERNANCE
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…An EAR is required to commence the Definition Phase of a project. A single EAR is prepared for each identifiable project.

1.17.2 Who validates the assumptions and forecasts included in the EAR, given that it precedes planning and costing?

RESPONSE:

The EAR document is accompanied by an approved business case (or Statement of Objectives). The business case informs the funding decision, provides accountability, and contains the evidence that supports the review and validation of the decision. The discussion of alternatives, key assumptions and the project forecast are key elements of the business cases upon which investment decisions are made.

For IT projects, the assumptions and forecasts included in the business case are validated by: Project Sponsor, Project Initiator, and Technology and Business Owners. The delivery specific assumptions, the proposed delivery approach, and detailed schedule and cost estimates for the phase being approved are reviewed by the Project Delivery group.

In addition, the Finance Director is responsible for the execution of sufficient and appropriate accounting or financial due diligence on all funding requests. Upon receipt of all approved documents, the Finance group ensures the cost estimate and contingencies have been properly prepared and reviewed per the estimating practices.

The internal review process required for each project funding request is dictated by the level of the expenditure and risk involved. Each phase of an IT project concludes with a Gate Review. The Gates support the decision-making process and result in a Go/No Go decision to recommend approval of funding for the next phase or cancelling a project. The Gate Review board is accountable for examining the key project deliverables at the gate being reviewed, and verifying

that the proposed project solution remains aligned with the stated project business drivers, and that the gate requirements (as defined in the ITDSP framework tailoring for the project) have been met.

With regard to the assumptions and forecasts in the Business Case, a project manager may be directed to undergo a peer review of the project schedule and cost forecast, confirming planning and costing assumptions. The gate review confirms completion of the peer review if it is a requirement for the project.

17.0 C. BC HYDRO APPROVAL AND OVERSIGHT CONTROLS AND PROCESSES

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…An EAR is required to commence the Definition Phase of a project. A single EAR is prepared for each identifiable project.

1.17.3 Is a separate EAR produced for every component of a project or is there only a one-to-one match between an EAR and a project?

RESPONSE:

Please refer to Attachment 15 of the Consolidated Information Filing, which sets out the use of a single EAR for a single project or for multiple similar items, etc.

17.0 C. BC HYDRO APPROVAL AND OVERSIGHT CONTROLS AND PROCESSES

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…An EAR is required to commence the Definition Phase of a project. A single EAR is prepared for each identifiable project.

1.17.4 Using the following example, please explain if and how multiple EARs would be produced.

Example: A project that entails procurement, installation and configuration of enterprise software and the infrastructure to host it can be broken down to its sub-projects:

i. Procurement, installation and configuration of servers into the data center which would include installation of operating system and device drivers;
ii. Network and security integration of server into the corporate system environment;
iii. Procurement, installation, configuration of enterprise software;
iv. Enterprise software integration to larger enterprise system software either by Enterprise Server Bus, Business Process Integrator/Workflow, or if enterprise software is a module of a larger software solution; and
v. Application development testing, user acceptance, and transition to operations.

RESPONSE:

The activities labelled as (i), (ii), (iii) and (v) described in the example represent activities that would be performed in the implementation phase of a project after a preferred alternative is selected. The cost estimate would be included in the EAR that supports the Implementation phase funding request or in subsequent revisions of the same.

Enterprise Service Bus (ESB) and enterprise software integration work described in item (iv) involves the integration to multiple systems. The decision to include or exclude ESB development and integration work in the Implementation phase of the specific project would depend upon the nature of the work and relationship to

the project. Within this context, BC Hydro bundles work when it is advantageous to do so under a separate project or program. In most cases however, if the work is specific to the project, the costs relating to development and configuration of interfaces would be included in the Implementation phase funding request for that project.

Please also refer to BC Hydro's April 8, 2016 response to BCUC IR 1.5.9 (Exhibit A2-5 of the SAP Inquiry proceeding).

17.0 C. BC HYDRO APPROVAL AND OVERSIGHT CONTROLS AND PROCESSES

Reference: AUTHORIZATION AND GOVERNANCE
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BC Hydro states on page 34 of the Consolidated Information Filing:

BC Hydro's MAPP 1.2.1B.3 EAR describes the purpose and function of an EAR, which is a control document used for obtaining authorization for initiative expenditures and commitments exceeding $100,000…

…An EAR is required to commence the Definition Phase of a project. A single EAR is prepared for each identifiable project.

1.17.5 Please explain how the estimates and forecasts included in the EAR are tracked and reported on.

RESPONSE:

Once the EAR is fully approved and funds are released, the project code is created in SAP with the approved authorized funding amount, and with other key project attributes based on the approved EAR. Thereafter, both summarized and detailed level project reporting is prepared on a monthly basis to ensure adherence to the established authorized funding for the project. The reports compare the authorized funding, the annual plan, the forecast, and spend incurred for the project. Also, to allow ongoing monitoring of project performance, a list of overspent projects and projects that are close to the authorized amount is provided to project management on a monthly basis.

Furthermore, the IT&T Project Delivery Framework described on page 37 of the Consolidated Information Filing sets the standards for standardized monthly reports. Gate approval points are positioned at the end of key stages in the project life-cycle to allow management to ensure alignment with project estimates, forecasts and the project schedule. Project changes (e.g., scope and milestones) are documented through a formal change control process, and summarized in the project status reporting which are produced monthly.

Finally, Project Completion and Evaluation Reports are prepared at the end of the project which compare the total costs of the project with the project forecast and authorized amount, and provide variance explanations if applicable.

17.0 C. BC HYDRO APPROVAL AND OVERSIGHT CONTROLS AND PROCESSES

Reference: AUTHORIZATION AND GOVERNANCE
Exhibit B-3, Section 4.2.2, pp. 34-35
Expenditure authorizations

BC Hydro states on page 34 of the Consolidated Information Filing:

BC Hydro's MAPP 1.2.1B.3 EAR describes the purpose and function of an EAR, which is a control document used for obtaining authorization for initiative expenditures and commitments exceeding $100,000…

…An EAR is required to commence the Definition Phase of a project. A single EAR is prepared for each identifiable project.

1.17.6 Please describe the oversight involved in tracking the life cycle of an EAR. Who is accountable for the EAR and how involved are they in the day-to-day fulfillment of the project for which the EAR authorizes?

RESPONSE:

BC Hydro's response to BCUC IR 1.17.5 describes the structure for tracking and project reporting over the life-cycle of an EAR.

The EAR is a financial control instrument, not a tracking document, prepared by Finance and informed by the accompanying business case. The EAR is reviewed and approved by Finance, jurisdictional owners, and the appropriate FAAP level approver i.e. Manager, Director, Executive, CFO, CEO, or the Board depending on the project size. While an EAR is in approval cycle, the progress through approval and sign off process is tracked by an administrative role in Technology.

The Project Manager and the Project team are primarily involved with the day to day fulfilment of the project and oversight of the project, and have accountability to complete the objectives and deliverables of the project within the approved funding.

Oversight of the project and accountability for ensuring alignment with the expenditures authorized in the EAR is also delivered as follows:

- **The Project Sponsor - accountable for the investment proposal and to ensure the project remains on track with the authorized funding. The Project Sponsor must ensure the project delivers on the scope, benefit and/or value, and costs as described in the business case.**

- **The Project Initiator – with authority and responsibility for developing the business case on behalf of the Sponsor and for initiating the work aligned with the authorized**

funding on the EAR, and to ensure the EAR and Business Case remain current through to implementation of the project. The role of the Project Initiator is also to manage the strategic direction of the project and relationships with the impacted business units and key stakeholders at a senior management level. The interactions would include reporting project financials on a regular basis.

- **Project Steering Committees - who monitor project performance and provide senior-level direction to the project.**

Please refer to section 4.3 of the Consolidated Information Filing, which describes the specific IT&T roles that monitor and support the success of a project. This section also describes the Gating Review process at critical points, which provide an opportunity for key stakeholders to assess the project to date, and to make a decision on feasibility and readiness of the project to proceed to the next stage/phase.

17.0 C. BC HYDRO APPROVAL AND OVERSIGHT CONTROLS AND PROCESSES

Reference: AUTHORIZATION AND GOVERNANCE
Exhibit B-3, Section 4.2.2, pp. 34-35
Expenditure authorizations

BC Hydro states on page 34 of the Consolidated Information Filing:

BC Hydro's MAPP 1.2.1B.3 EAR describes the purpose and function of an EAR, which is a control document used for obtaining authorization for initiative expenditures and commitments exceeding $100,000…

…An EAR is required to commence the Definition Phase of a project. A single EAR is prepared for each identifiable project.

1.17.7 Is there a common process and mechanism that projects must use to forecast EAR Revisions beforehand or are EAR Revisions triggered on an event-by-event basis?

RESPONSE:

An EAR revision may be required any time after the original EAR is prepared. As described in the response to BCOAPO IR 1.7.1, the Project Identification, Definition, and Implementation phases of a project are preceded by an approved business case or Statement of Objectives, and Expenditure Authorization Request. Hence, an EAR revision is required with each progression to the next development phase of the project.

In addition, an EAR revision is required when the forecast for the project is expected to exceed the authorized amount at any given stage, and if the project scope has materially changed.

EAR revisions are subject to the same review and approval process as the original EAR.

17.0 C. BC HYDRO APPROVAL AND OVERSIGHT CONTROLS AND PROCESSES

Reference: AUTHORIZATION AND GOVERNANCE
Exhibit B-3, Section 4.2.2, pp. 34-35
Expenditure authorizations

BC Hydro states on page 34 of the Consolidated Information Filing:

BC Hydro's MAPP 1.2.1B.3 EAR describes the purpose and function of an EAR, which is a control document used for obtaining authorization for initiative expenditures and commitments exceeding $100,000…

…An EAR is required to commence the Definition Phase of a project. A single EAR is prepared for each identifiable project.

1.17.8 In what situations are EARs approved, denied or cancelled, and what criteria are used to make these determinations?

RESPONSE:

The approval, denial and cancellation of a project EAR may occur at different points in a projects life-cycle based on the evolving business priorities of the company. The decision to cancel or approve an EAR is only made after consideration of the business outcomes to be achieved, the alternatives considered, the recommended course of action, and the associated costs and benefits of the project.

An EAR may be approved after the applicable project Gating conditions are met, and the business case and justification for the project has passed the scrutiny and review of the Project Sponsor, the Project Initiator, Project Delivery & Finance, and the FAAP approver. As appropriate, the feedback received through the review process must be incorporated in the documents and validated before a project is approved.

An EAR may be cancelled when the project is no longer technically viable and/or the costs and benefits of a project are no longer feasible or justified. The decision to cancel a project may be made during the execution of an approved phase; i.e., prior to the project undergoing the next Gate review.

The criteria or considerations that may be used to determine if an EAR would be approved (or cancelled) include: the business justification for the project, management support for the project, alignment with the 10 year capital expenditures forecast & annual budget, availability of key resources, and the technical feasibility and costs and benefits of the project. The Executive, the Project Sponsor, the Project Initiator, the Project Steering Committee, Project

Delivery, and other key stakeholders, including Finance, play a key role in the decision-making process. Finally, examples of documentation that may be used to support the decision-making process include: Gating decisions, cost estimate reviews, compliance and due diligence reviews, and an updated business case or Statement of Objectives.

17.0 C. BC HYDRO APPROVAL AND OVERSIGHT CONTROLS AND PROCESSES

Reference: AUTHORIZATION AND GOVERNANCE
Exhibit B-3, Section 4.2.2, pp. 34-35
Expenditure authorizations

BC Hydro states on page 34 of the Consolidated Information Filing:

BC Hydro's MAPP 1.2.1B.3 EAR describes the purpose and function of an EAR, which is a control document used for obtaining authorization for initiative expenditures and commitments exceeding $100,000…

…An EAR is required to commence the Definition Phase of a project. A single EAR is prepared for each identifiable project.

1.17.9 Please explain what happens when an EAR Revision requires a change to the overall project budget.

RESPONSE:

An approved EAR revision results in a change to the authorized funding for the project, and the project information in SAP is updated accordingly. The project performance is then assessed against the revised cumulative authorized approved expenditures for the project.

17.0 C. BC HYDRO APPROVAL AND OVERSIGHT CONTROLS AND PROCESSES

Reference: AUTHORIZATION AND GOVERNANCE
Exhibit B-3, Section 4.2.2, pp. 34-35
Expenditure authorizations

BC Hydro states on page 34 of the Consolidated Information Filing:

BC Hydro's MAPP 1.2.1B.3 EAR describes the purpose and function of an EAR, which is a control document used for obtaining authorization for initiative expenditures and commitments exceeding $100,000…

…An EAR is required to commence the Definition Phase of a project. A single EAR is prepared for each identifiable project.

1.17.10 Who has visibility to EAR Revisions and how are EAR Revisions tracked, reported on, and/or measured?

RESPONSE:

Project stakeholders have visibility to the revised authorized approved funding through regular project management and financial reporting. The key stakeholders would include the: Project Sponsor, Project Initiator, Project Steering Committee, Project Manager and the Finance group.

Regular Project Status reports and the Project Completion and Evaluation Reports provide a summary of the EAR revisions related to a specific project.

Project & EAR performance is discussed, tracked and reported at the appropriate Gate Review meetings, and regular Project Status and Steering Committee meetings.

Also, please refer to BC Hydro's response to BCUC IRs 1.17.2 and 1.17.5.

18.0 C. BC HYDRO APPROVAL AND OVERSIGHT CONTROLS AND PROCESSES

Reference: PROJECT MANAGEMENT GUIDELINES FOR TECHNOLOGY PROJECTS
Exhibit B-3, Attachment 18, p. 23
Relationship with submitting business cases / EARs for approval

BC Hydro provides the following diagram on page 23 of Attachment 18 to the Consolidated Information Filing:

BC Hydro further provides the following information on page 23 of Attachment 18 regarding ITDSP:

The appropriate ITDSP Gates must be passed before submitting a Statement of Objectives / EAR or Business Case / EAR, for approval:

- Gate 1 Identification Approval must be passed before submitting an Identification Phase Statement of Objectives / EAR for approval. Please note that Gate 1 is handled through the Project Release Process
- Gate 2 Preliminary Approval must be passed before submitting a Definition Phase Business Case / EAR for approval
- Gate 3 Full Funding Approval must be passed before submitting an Implementation Business Case / EAR for approval.

1.18.1 For each of the following projects, please provide the Business Cases, Statement of Objectives, Project Charters, and Project Level Change Notices used for each of ITDSP Gates 1, 2 and 3:

i. PeopleSoft Financials Upgrade;
ii. Financial Systems Replacement Project;
iii. Enterprise Financials Upgrade;
iv. Plan and Schedule Work (PSW);
v. Project & Portfolio Management ;
vi. EMPower (formerly called the “Human Resources System Replacement” project); and
vii. Distribution Work Schedule (DWS).

RESPONSE

This IR requests information on projects based on ITDSP requirements that were not defined and in place at the time some of these projects were being implemented. Specifically, for some of these projects the Statement of Objectives, Project Charters, and Project Level Change Notices were not required and do not exist. Also, in some cases BC Hydro could not locate some of these documents.

Please see the attachments to this response in reference to the following table. Please note the following:

1. **Business cases (and EARs) have been provided as attachments to DIX IR 1.16.0 and are referenced accordingly in the table below. The exception is the business case and EAR for the PeopleSoft Financials Upgrade project, which is provided as Attachment 1 to this response.**

2. **In December 2007 the PeopleSoft Financials Upgrade project Business Case and EAR was approved. Subsequently, this project was at times referred to as the Enterprise Financials Upgrade project. However, once the decision was made to use SAP as the default solution for ERP applications, BC Hydro began a process to evaluate SAP Financials through the Financial System Replacement project, whose first Business Case and EAR was approved in August 2008. The FSR project was also sometimes referred to as the Enterprise Financials Upgrade project.**

3. **Project level change requests, where available, have been combined into single attachments.**

Project	Document	Attachment Number
i. PeopleSoft Financials Upgrade	**Business Case / EAR Revision 0**	**Attachment 1**
ii. Financial System Replacement Project	**Business Case / EAR Revision 0**	**DIX IR 1.16 Attachment 56**
	Business Case / EAR Revision 1	**DIX IR 1.16 Attachment 57**
	Business Case / EAR Revision 2	**DIX IR 1.16 Attachment 58**
	Business Case / EAR Revision 3	**DIX IR 1.16 Attachment 59**
	Project Charter	**Attachment 2**
	Project Change Requests	**Attachment 3**

Project	Document	Attachment Number
iv. Plan and Schedule Work (PSW)	**Business Case / EAR Revision 0**	**DIX IR 1.16 Attachment 159**
	Business Case / EAR Revision 1	**DIX IR 1.16 Attachment 160**
	Business Case / EAR Revision 2	**DIX IR 1.16 Attachment 161**
	Project Charter Phase I	**Attachment 4**
	Project Charter Phase II	**Attachment 5**
	Project Change Requests	**Attachment 6**
v. Project and Portfolio Management (PPM)	**Business Case / EAR Revision 0**	**DIX IR 1.16 Attachment 121**
	Business Case / EAR Revision 1	**DIX IR 1.16 Attachment 122**
	Business Case / EAR Revision 2	**DIX IR 1.16 Attachment 123**
	Business Case / EAR Revision 3	**DIX IR 1.16 Attachment 124**
	Business Case / EAR Revision 3	**DIX IR 1.16 Attachment 125**
	Statement of Objectives – Phase I	**Attachment 7**
	Statement of Objectives – Phase II	**Attachment 8**
	Project Charter – Phase I	**Attachment 9**
	Project Charter – Phase II	**Attachment 10**
	Project Charter – Wave 2	**Attachment 11**
	Project Change Requests	**Attachment 12**
vi. EMPower	**Business Case / EAR Revision 0**	**DIX IR 1.16 Attachment 87**
	Business Case / EAR Revision 1	**DIX IR 1.16 Attachment 88**
	Business Case / EAR Revision 2	**DIX IR 1.16 Attachment 89**
	Business Case / EAR Revision 3	**DIX IR 1.16 Attachment 90**
	Project Charter	**Attachment 13**

Project	Document	Attachment Number
vii. Distribution Work Scheduling (DWS)	**Business Case / EAR Revision 0**	**DIX IR 1.16 Attachment 163**
	Business Case / EAR Revision 1	**DIX IR 1.16 Attachment 164**
	Business Case / EAR Revision 2	**DIX IR 1.16 Attachment 165**
	Project Change Requests	**Attachment 14**

EAR ROUTING SHEET

BCH Services Asset Corp.

EAR Name **PeopleSoft Financials Upgrade to R9** EAR# **1120179**

Control / Approval	OCS	NAME PRINTED	INITIALS SIGN.	DATE SENT
OCIO Administration	D13	Meena Lee		2007/12/10
Project Initiator	D13	Richard Wohl		Dec 10, 2007
Jurisdictional Review - CIO (as required) over $50k	D13	Don Stuckert		Dec, 10, 2007
Corporate Financial Evaluation	D15	Keith Browning		Dec. 10, 2007
Financial Approval - Group Controller	D15	Carol Richards		Dec 12, 2007
CFO - Executive Vice President of Finance	D18	Alister Cowan		Dec 13, 2007
OCIO Administration	D13	Meena Lee		Dec. 14, 2007
CAR Tracking	G10	Steve Howitt		

Query	Commentary
Connected to which IT Capital Plan initiative?	PS VEr8.9- Enterprise Financial Management Upgrade
Total EAR amount requested falls within remaining value of initiative?	Total expected Capital Spend for F2008 of $1,619.4K falls within original initiative plus Enterpise Contingency for F2008. Remaining value of EAR must be planned as part of F2009 IT Capital Plan.
Other initiative(s) amounts given up?	None.
OMA Initiative amounts required?	Initial OMA spend for F2008 is within budget. Required OMA going forward is $889.8K in F2009 and $500.0K in F2010.

Expenditure Authorization Request (EAR)

BCH-SAC

BC hydro

Section 1 Summary of Expenditures and Approvals

1.1 Project Creation

EAR Title				Project ID.	Rev. No.
PeopleSoft Financials Upgrade to R9				1120179	
Project Initiator	Local	Project Manager	Local	Date	LoB/SO
Richard Wohl	7-9152	Adrian Chooi	7-9104	2007-10-26	BCH SAC

Expenditure Type

✓ Specific Capital ❑ Recurring Capital ❑ OMA Initiatives
❑ Deferred DSM ❑ Site Surveys & Investigations ❑ Capital Retirement

Post Expenditure Review
Yes ❑ No ✓
Expected PER Date _____

Request Reason ✓ **New** **Revision:** ❑ Scope Change ❑ New Phase
❑ Cost Change ❑ Other please specify:

Originating Department (CC) **1320**
End Use Department (CC) **1320**

For Capital Projects Only
Estimated In-Service Date: 2009-03-31 High Level Business Driver: Sustaining ✓ Growth ❑

Project Description
To upgrade PeopleSoft Financials R8.0 to PeopleSoft Enterprise Financials Management R9.0, incorporating accounting model, business function and IT changes and improvements.

1.2 Investment

Request Dollars (000's)	Total Prior Requests	Current Request	Total Request
Direct Costs – Capital, (incl. Recurring Cap., SSI)		$ 5,348.0	**$ 5,348.0**
– OMA			
– Deferred DSM			
Overhead		$ 0.0	**$ 0.0**
IDC		$ 352.8	**$ 352.8**
Total Investment Cost (**A**)		$ 5,700.8	**$ 5,700.8**
Retirement of Capital Assets (Complete Section 6)			
Request Dollars (000's)	**Total Prior Requests**	**Current Request**	**Total Request**
Net Book Value			
Estimated Dismantling Cost			
Total Authorized Retirement Cost (**B**)		$ 0.0	**$ 0.0**
Cumulative EAR Total (A+B)		$ 5,700.8	**$ 5,700.8**

1.3 Required Review & Approvals

	Name	ODMS#	Signature	Date
Project Initiator:	Richard Wohl	1370		Dec 10, 2007
Project Sponsor:	Alister Cowan	0112		
Jurisdictional Approval (CIO)	Don Stuckert			Dec. 10 2007
Corporate Financial Evaluation Review:	Keith Browning	1974		Dec. 10 2007
Corporate Groups Controller:	Carol Richards	0625		Dec 12, 2007
CFO - Exec Vice President of Finance	Alister Cowan	0112		Dec 13/2007
President and CEO, BC Hydro:				

Expenditure Authorization Request (EAR)

BC hydro

Section 2 Annualized Forecast

2.1 Project Expenditures by Fiscal Year (*Up to date of project completion*)

	Prior Expenditures	Fiscal 2008	Fiscal 2009	Fiscal 2010	Fiscal 2011	Balance	Total
Capital (Incl. Overhead & IDC)		$ 1,619.4	$ 4,081.4				$ 5,700.8
Deferred DSM							
OMA							
Total		$ 1,619.4	$ 4,081.4				$ 5,700.8

2.2 Forecast Annual Net Income Impact (*For Years following In-service*)

(This table is only applicable for capital projects >$100,000)

	Fiscal 2009	Fiscal 2010	Fiscal 2011	Fiscal 2012	Fiscal 2013
(Revenue)					
Cost of Energy					
OMA increase/(decrease)					
Depreciation & Amortization	$ 105.6	$ 2,692.0	$ 2,692.0	$ 105.6	$ 105.6
Taxes (property)					
Finance Charges					
Net Income Impact (+ve)/-ve	$ 105.6	$ 2,692.0	$ 2,692.0	$ 105.6	$ 105.6

2.3 DSM Program

(This table is applicable for DSM Projects only)

	Fiscal 2005	Fiscal 2006	Fiscal 2007	Balance	Total for this request	Full Program
Annual Energy Savings (GWh/Yr)						
Cumulative Energy Savings (GWh/Yr)						
Demand Savings (MW)						
Unit Hydro Costs (¢/kWh)						
Unit Total Resource Costs (¢/kWh)						
		Full Program Year	Final Year			
Market penetration of technology (%)				[redacted]	[redacted]	[redacted]
Status quo estimate (%)				[redacted]	[redacted]	[redacted]
Tag on estimate (%)				[redacted]	[redacted]	[redacted]

Inquiry of Expenditures related to the adoption of the SAP Platform Page 3 of 48

BCUC IR 1.18.1 Attachment 1

Expenditure Authorization Request (EAR)

BC hydro

Section 3 EAR Project Information

3.1 INITIAL SETUP INFORMATION REQUIRED IN PEOPLESOFT PROJECTS

Request Details

Project Description	**PeopleSoft Financials Upgrade to R9**	
Project Type	PINIT	
Status	P (Planned)	
Dept	C1320	
Product (ABC Activity)	619500	
Account Prefix :	✓ Specific Capital 160XXX	❑ Recurring Capital 162XXX
	❑ OMA Initiative 600XXX	❑ Deferred 079XXX
	❑ Site Survey & Investigation 161XXX	❑ Retirements 300XXX
Business Driver	REL	
Business Function	CU	
Asset Categories	CSW	91%
	CHW	9%
		%
		100 %
Parent Project (PWPKG)	1109453	

Section 4 Approved EAR Project Information

FINAL SETUP INFORMATION REQUIRED IN PEOPLESOFT PROJECTS (AFTER EAR APPROVAL)

4.1 Steps to be completed in PeopleSoft Projects

- ❑ Project Approval page completed by LoB/SO approver
- ❑ Approve the PINIT project by switching the status from "P" to "A"
- ❑ Attach document to EAR project - (Justification should be kept on file, attach electronic copy to PINIT project)
- ❑ Create project(s) and add to the tree (*see appendix I for sample template*)
- ❑ Create assets and/or assign cost allocations to existing assets via asset detailing (*appendix II)*
- ❑ Create a retirement detailing to assign cost allocations to assets and/or retire individual assets (*appendix III*)

4.2 Project-Activity Creation - Request Details

Activity ID	001	Activity ID	002
Activity Description	Software Costs	Activity Description	Hardware Costs
Activity Type	STD (Standard)	Activity Type	STD (Standard)
Status	P	Status	P
Account Prefix	160XXX	Account Prefix	160XXX

4.3 Entry of EAR Approved Amount In PeopleSoft Projects

Activity ID	Analysis Type (EAR or EAU)	Account Prefix	Resource Type	Resource Cat	Resource Sub-category	Resource Amount ($000)
001	EAR	160	1	11	111	$ 888.8
001	EAR	160	3	32	320	$ 467.4
001	EAR	160	4	45	456	$ 3463.5
001	EAR	160	9	97	970	$ 352.8
002	EAR	160	4	41	416	$ 528.2
TOTAL						$ 5,700.8

Note: the total resource amount must equal the Cumulative EAR Total for the Current Request in Section 1.2. The level of detail entered is discretionary, but should reflect the level of detail in your LoB/SO reporting requirements

Expenditure Authorization Request (EAR)

BC hydro

Section 5 Capital Project Asset Acquisition/Construction

5.1 Asset Summary

					Depreciation Impact		
Profile ID	Originating Asset ID	Location	Asset Type	End Use Dep't ID	Original Cost ($000)	Estimated Life	Annual Depr Expense
C80302	PSF FIN R9 Upgrade	EDM	I	1320	$ 5,172.5	2	$ 2,586.3
C80505	EDMBCHPAHR3	EDM	I	1320	$ 289.2	5	$ 57.8
C80505	TEDMBCHPAHR3	EDM	I	1320	$ 239.1	5	$ 47.8
						TOTAL:	$ 2,691.9

** *New Location code required for second site.*

COMPLETE THE FOLLOWING SUBSECTIONS 5.2 and 5.3 ONLY IF APPLICABLE

5.2 Asset Transfers

Value of existing asset transferred from other areas:

Originating Department/ Business Unit	Receiving Department/ Business Unit	Asset #	Original Cost	Accumulated Depreciation

5.3 Contributions in Aid

❑ Yes, provide details ✓ No

Contributor's name _____

Amount of contribution _____

Date(s) contribution(s) to be received _____

CIA account distribution: 307000

Section 6 Capital Retirements - N/A

6.1 Funding Request

Request Dollars (000's)	Total Prior Requests	Current Request	Total Request
Original Cost of Assets (A)			
Accumulated Depreciation (B)			
Net Book Value (C = A-B)			
Estimated Dismantling Cost (D)			
Total Authorized Retirement Cost (E=C+D)			
Net Salvage (FRSR) Provision Debt (Credit) (F)			
Estimated Salvage Proceeds (G)			
Net Cost of Retirement (E+F-G)			

6.2 Retirement Dollars

	Asset Description	Original Cost	Accum. Depr.	NBV	Est. Dismantling	FRSR Provision	Est. Salvage	Profile ID Life	Actual Life
1									
2									
3									
4									
5									
6									
7									
8									
Total		$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	0	0
	Transfer to Table 6.1	*A*	*B*	*C*	*D*	*F*	*G*		

Inquiry of Expenditures related to the adoption of the SAP Platform Page 6 of 48

BCUC IR 1.18.1 Attachment 1

EAR APPENDIX I - PeopleSoft Project Creation Template

Project

Note: Bolded fields mandatory

Project ☒ New ☐ Modify

EAR Title and Project ID: **PeopleSoft Financials Upgrade to R9**

Projects Business Unit 10022 **Project ID** 1120180

Project General

Description PeopleSoft Financials Upgrade to R9

Project Type CHRGE

Project Description PeopleSoft Financials Upgrade to R9

Project Long Description

Project Status

Effective Date 2007-10-01 Actual start

Status Planned Actual Finish

Percent Complete 0% Early Start Date Baseline Start

Priority Early Finish Date Baseline End

Comments :

Project Accounting

Effective Date 2007-10-01

Department 1320

Product 619500

Account (Prefix) 160XXX

BCH Strategic Program %

Project Definition (Parent Project) **Parent Project** 1120179 **Interest (IDC)** ☒ Y ☐ N **Overhead (COH)** ☐ Y ☒ N

Manager

Effective Date 2007-10-01 Project Manager Adrian Chooi Start Date

Project Role End Date

Location Effective Date Location Code

Attachments

File name and location: File 2

User Fields

Project User 1		Project User 4		User Currency	
Project User 2		Project User 5		Amount 1	
Project User 3		Date 1		Amount 2	
		Date 2		Amount 3	

Approved by: Date:

EAR APPENDIX I - PeopleSoft Project Creation Template

Project – Activity

Project ID: 1120180

Activity ☒ New ☐ Modify

For multiple activities, complete multiple forms.

Activity ID 001

Activity Details

Activity ID description Software Costs

Project Description **PeopleSoft Financials Upgrade to R9**

Project Long Description

Definition

WBS ID

WBS description

WBS short description

Interest (IDC) ☒ Y ☐ N

Overhead (COH) ☐ Y ☒ N

Activity Status

Effective Date 2007-10-01 Activity Priority

Status Planned Percent Complete

Comments

Activity Accounting

Effective Date 2007-10-01

Department 1320

Product 619500

Account (Prefix) 160XXX

BCH Strategic Program %

Location

Effective Date 2007-10-01 Location Code EDM

User Fields

Project User 1		Date 1		User Currency	
Project User 2		Date 2		Amount 1	
Project User 3				Amount 2	
Project User 4				Amount 3	
Project User 5					

Approved by: Date:

EAR APPENDIX I - PeopleSoft Project Creation Template

Project – Activity

Project ID: 1120180

Activity ☒ New ☐ Modify
For multiple activities, complete multiple forms.

Activity ID 002

Activity Details
Activity ID description Hardware Costs
Project Description **PeopleSoft Financials Upgrade to R9**
Project Long Description

Definition
WBS ID
WBS description
WBS short description
Interest (IDC) ☐ Y ☒ N
Overhead (COH) ☐ Y ☒ N

Activity Status
Effective Date 2007-10-01 Activity Priority
Status Planned Percent Complete
Comments

Activity Accounting
Effective Date 2007-10-01
Department 1320
Product 619500
Account (Prefix) 160XXX
BCH Strategic Program %

Location
Effective Date 2007-10-01 Location Code EDM

User Fields

Project User 1		Date 1		User Currency	
Project User 2		Date 2		Amount 1	
Project User 3				Amount 2	
Project User 4				Amount 3	
Project User 5					

Approved by: Date:

EAR APPENDIX I - PeopleSoft Project Creation Template

Project Resources – Estimate Amounts

Project ID:

Activity ID:

Analysis type = EST

Resource Type		**Category**		**SubCategory**	
Quantity		Unit of Measure		**Amount**	
Resource Type		**Category**		**SubCategory**	
Quantity		Unit of Measure		**Amount**	
Resource Type		**Category**		**SubCategory**	
Quantity		Unit of Measure		**Amount**	
Resource Type		**Category**		**SubCategory**	
Quantity		Unit of Measure		**Amount**	
Resource Type		**Category**		**SubCategory**	
Quantity		Unit of Measure		**Amount**	
Resource Type		**Category**		**SubCategory**	
Quantity		Unit of Measure		**Amount**	
Resource Type		**Category**		**SubCategory**	
Quantity		Unit of Measure		**Amount**	
Resource Type		**Category**		**SubCategory**	
Quantity		Unit of Measure		**Amount**	

EAR APPENDIX II - Capital Projects Asset Detailing Information for PeopleSoft Fixed Assets

Detail Pool Definition

Primary Project ID:	Primary Project Title:
Sub-Project ID(s):	Sub-Project Title(s):
Activity ID(s):	Activity(s):
Sequence:	Seq. Description:

Detailing Add/Adjust

	New/ Existing/ CIA	Profile ID	Location	Bus. Function	Dept ID	In-Service Date	Allocation $	Allocation %	Relation
1									
2									
3									
4									
5									

Comments *(Please include specific instructions for detailing – e.g. License Info., Functional Tag, Vintage Year)*

Detail Pool Definition

Primary Project ID:	Primary Project Title:
Sub-Project ID(s):	Sub-Project Title(s):
Activity ID(s):	Activity(s):
Sequence:	Seq. Description:

Detailing Add/Adjust

	New/ Existing/ CIA	Profile ID	Location	Bus. Function	Dept ID	In-Service Date	Allocation $	Allocation %	Relation
1									
2									
3									
4									
5									

Comments *(Please include specific instructions for detailing – e.g. License Info., Functional Tag, Vintage Year)*

EAR APPENDIX III - Capital Retirement Detailing for PeopleSoft Fixed Assets

Detail Pool Definition

Primary Project ID:	Primary Project Title:
Sub-Project ID(s):	Sub-Project Title(s):
Activity ID(s):	Activity(s):
Sequence:	Seq. Description:

Details of Asset Retirement

Ref**	Asset Description	Asset Type (I/M)	Retirement Option*	Tag #	Asset Class (Profile ID)	Location	Bus. Func.	Dep't	Ret. Date	Dismtl. %	Salv. %
1	N/A										
2											
3											
4											
5											
6											
7											
8											
Total											

* Indicate whether you are selecting 'Retire & Dismantl/Salvage', 'Held for Sale & Dismtl./Salvg.' or 'Only Dismantle/Salvage'. Only the last option is a valid choice for Mass assets.
** Reference number corresponds to Assets listed in Section 6.2 of the EAR

Inquiry of Expenditures related to the adoption of the SAP Platform Page 12 of 48
BCUC IR 1.18.1 Attachment 1

Expenditure Authorization Request

COH and IDC Calculation

Project Start Date	January 1, 2008	*Month Day, Year*	e.g. "Sept 15, 2005"
In Service Date	June 30, 2009	*Month Day, Year*	e.g. "April 1, 2007"

Fiscal Year	F2008	F2009	F2010	F2011	F2012	F2013	F2014	F2015	Total	*EAR input*
IDC Rate	*6.88%*	*6.88%*			*0.00%*	*0.00%*	*0.00%*	*0.00%*		
COH Rate	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*		
	No COH rate		*No IDC rate*	*No IDC rate*						
Capital Costs	$ 1,599,551	$ 3,748,388							$ 5,347,939	*Total costs should match Section 1.2*
Non IDC/COH Capital Costs	$ 428,244	$ 100,000							$ 528,244	
Deferred DSM									$ -	
Contributions in Aid									$ -	*Table 5.3*
IDC	$ 19,871	$ 332,962	$ -	$ -	$ -	$ -	$ -	$ -	$ 352,833	*Table 1.2*
Overhead (COH)	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	*Table 1.2*
Finance Charges	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -		*Table 2.2*
Capital (Incl. IDC and COH)	$ 1,619,422	$ 4,081,350	$ -	$ -	$ -	$ -	$ -	$ -	$ 5,700,772	*Table 2.1*

Verion 1.5 - July 2005

Peoplesoft Financials Upgrade to Release 9
Classification of Business Case Costs to EAR Preparation

The following is a breakdown of all project phase costs into Capital and Expense classifications

Project Phase	F2008	F2009	F2010	Total	
Business Analysis & Design	457,509	-	-	457,509	
Fit Gap	148,493	164,866	-	313,359	
IT Analysis and Design	565,305	1,007,630		1,572,935	
IT Build	-	2,081,777		2,081,777	
Testing	-	394,115		394,115	
	1,171,307	3,648,388	-	4,819,695	Capital Labour (1)
Infrastructure Set-Up	428,244	100,000	-	528,244	Hardware
	1,599,551	3,748,388	-	5,347,939	Total Capital Cost
Verification of Business Process	247,455			247,455	
Change Management		789,750		789,750	
Training		100,000		100,000	
Post Implementation Support			500,000	500,000	
	247,455	889,750	500,000	1,637,205	Labour Expense
Total of all Phase Costs Above	1,847,006	4,638,138	500,000	6,985,144	Business Case

Total Capital Cost	1,599,551	3,748,388	-	5,347,939
IDC	19,871	332,962		352,833
Total Cost of EAR - Section 2.1	1,619,422	4,081,350	-	5,700,772

Browning, Keith

From: Browning, Keith
Sent: 2007, December 10 10:28 AM
To: Wohl, Richard; Stuckert, Don
Cc: Richards, Carol; Pietramala, Paula
Subject: OMA Requirements for PeopleSoft Financials Upgrade to R9

Good morning, Don and Richard.

I have reviewed the Business Case and revised the Expenditure Authorization Request (EAR) for this project.

This document is ready for your signature.

I bring to your attention the future planning requirements put into motion by this EAR:

- For F2009 the IT Capital Plan must reflect $4,081,350 in Capital funding for the project.
- For F2009 the project requires $889,750 in Operating funds, which can be budgeted from OCIO Base OMA and/or Initiative OMA funds.
- For F2010 the project requires $500,000 in Operating funds, which can be budgeted from OCIO Base OMA and/or Initiative OMA funds.

Please ensure these requirements are considered in the IT Capital Plan process for F2009 and F2010.

Thanks.

2007-12-10

Browning, Keith

From: Chooi, Adrian
Sent: 2007, December 07 2:08 PM
To: Browning, Keith
Cc: Wohl, Richard
Subject: RE: Peoplesoft Upgrade EAR
Attachments: Business Case - PSF Upgrade 9 0 - Version 1.6.doc

Hi Keith,
Based on Darin's assessment, I have split the OMA component from Fit Gap and Change Management.
I have updated Section 10 and Section 12.4.

Please review and let me know if there is any further change.

Thanks.

Adrian Chooi
Enterprise Business Applications
Office of the Chief Information Officer

BChydro
7th Floor 4555 Kingsway,
Burnaby, British Columbia
Canada V5H 4T8
Tel: 604.453.9104 (local 7.9104)
Fax: 604.453.9110
Email: adrian.chooi@bchydro.bc.ca

From: Browning, Keith
Sent: December 7, 2007 10:46 AM
To: Chooi, Adrian
Cc: Wohl, Richard
Subject: FW: Peoplesoft Upgrade EAR

Hi Adrian.

I asked Darin Hale to assess various work activities described in the PSF Financials Upgrade business case and whether they fit the classification of capital or expense according to Hydro's accounting policies.

Based on Darin's assessment would you please review the attached copy of APM 5.20 then reconsider whether the work described should be considered OMA or Capital.

If you feel Darin's assessment is incorrect please advise me or Darin with more descriptive of the work being done in order for us to make a better assessment for you.

Please call me as you'll probably need some help with this process.

Thanks Adrian.

From: Hale, Darin
Sent: 2007, December 07 10:17 AM
To: Browning, Keith
Cc: Wong, Simon
Subject: RE: Peoplesoft Upgrade EAR

2007 12 07

eith, the descriptions are vague; therefore, I cannot determine the appropriate accounting treatment for all costs included the Business Analysis& Design and Fit Gap tasks. Based on the descriptions, it appears that there are activities that ould be appropriate to capitalize and some that may not. All system design and configuration activities included in these sks are appropriate to capitalize. The Fit Gap description appears to identify some current state assessment work. All urrent state assessment work should be expensed in accordance with APM 5.20. If these tasks include and process views, process re-engineering, requirements gathering or functional analysis, these costs should be expensed.

reviewing the list of tasks on page 13, it appears that change management activities are included in testing tasks. The ntire testing task is shown as capital. The testing activities should be capitalized; however, all change management costs ould be expensed.

PRIVILEGED AND CONFIDENTIAL DRAFT

his document contains confidential, internal policy recommendations and was prepared in consultation with legal counsel r Revenue Requirement proceedings.

e intend this message only for the person or entity named in the addressee field. This message contains information that is privileged and/or nfidential. If you are not the addressee or an employee or agent responsible for delivering this message to the addressee, please notify us mediately by telephone, return this message to the e-mail address noted below and permanently destroy any copies you may have. Any ssemination or copying of this message by anyone other than the addressee is strictly prohibited.

---

rom: Browning, Keith
ent: 2007, December 06 4:35 PM
o: Hale, Darin
ubject: FW: Peoplesoft Upgrade EAR

l Darin.

Vould you be able to assist me on this question?

---

rom: Browning, Keith
ent: 2007, December 06 4:34 PM
o: Wong, Simon
c: Richards, Carol
ubject: FW: Peoplesoft Upgrade EAR

li Simon.

m in the process of reviewing the Business case and EAR for the Peoplesoft Financial Systems Upgrade to version 9.0.

would like to get your assessment of certain costs identified in the business case and whether in your opinion they can be apitalized.

n Section 10 of the business case costs are identified under two sections: Business Analysis & Design and Fit Gap. At the top of age 14 are short descriptions for each type of work. Although sketchy, it appears that both phases represent design and onfiguration work.

\ccounting policy 5.20 classifies design and configuration work as part of the development stage, which can be capitalized.

Vould you agree with this assessment?

f you don't feel this work can be capitalized would you please send me an explanation to discuss with Richard Wohl.

Thanks.

BUSINESS CASE

ENTERPRISE FINANCIALS RE-IMPLEMENTATION
(PeopleSoft Financials Upgrade)

Revision 1.7

December 12, 2007

Submitted by:
Enterprise Business Applications
Office of the CIO

TABLE OF CONTENTS

1. EXECUTIVE SUMMARY 3

2. PROBLEM / OPPORTUNITY / DRIVERS 4

3. BACKGROUND 6

4. KEY ASSUMPTIONS 7

5. ALTERNATIVE ANALYSIS 8

5.1 ALTERNATIVE 1: DO NOTHING (STATUS QUO) 8
5.2 ALTERNATIVE 2: UPGRADE PEOPLESOFT FINANCIALS WITH SPECIFIC PRE-DEFINED BUSINESS AND DATA PROCESSES IMPROVEMENTS 8
5.3 ALTERNATIVE 3: RE-PLATFORM TO SAP 9

6. FINANCIAL AND NON FINANCIAL EVALUATION 9

7. RISK ASSESSMENT AND MITIGATION 10

8. VALUE REALIZATION / PERFORMANCE MEASURES / POST EXPENDITURE REVIEW 11

9. PROJECT PLAN AND SCHEDULE 12

10. PROJECT COSTS 14

11. RECOMMENDATION 15

12. APPENDIX 16

12.1 CUSTOMIZATION 16
12.2 EXPLANATION FOR THE COMPUTATION OF ESTIMATED PROJECT COST IN SECTION 6 17
12.3 ESTIMATED HARDWARE COSTS 19
12.4 ESTIMATED LABOUR COSTS (PHASING) 20

1. Executive Summary

Objective

The objective of this sustaining capital project is to upgrade PeopleSoft Financials software from current release 8.0 SP3 to PeopleSoft Enterprise Financial Management Release 9.0

The Estimated Total Cost for this project is $7 million (refer to page 13 - Project Costs).

Background

The current Financial System was implemented in 2002. Since this time, PeopleSoft Financials has not been upgraded even though the ERP value proposition suggests that new functionality will be leveraged as new releases become available. In addition, the current release (PeopleSoft Financials Release 8.0 SP3) is no longer supported by the vendor.

PeopleSoft Enterprise Financials Management Release 9.0 was released in September 2006. There are no plans to have a direct upgrade path from release 8.0 SP3 to release 9.0. In order to perform an upgrade to version 9.0, a multi-upgrade will be required (i.e. upgrade from release 8.0 SP3 to release 8.9, and then upgrade from release 8.9 to release 9.0).

The long term IT Strategy is to consolidate applications and standardize processes. This project does not pre-determine the future platform architecture. It does however, extend the useful life of the existing assets.

Alternatives

There are 3 alternatives:

Alternative 1: Do Nothing (Status Quo)
Alternative 2: Upgrade PeopleSoft Financials (Release 8.0 to Release 9.0) with specific pre-defined business and data processes improvements
Alternative 3: Re-platform to SAP

Alternative 2 is the most viable and will provide the business and finance groups the most expeditious opportunity to further proceed with Finance initiatives, clean-up codes, revise accounting and business models, re-align project costing, re-model Asset Management, improve financial integration and data integrity, and standardization of Enterprise Reporting.

Furthermore, this project will provide a vendor supported platform which other projects (such as P2P, PIMS and EARG Work Management) can build desired application integration.

Recommendation

Alternative 1 does not address current risks regarding product obsolesce and Alternative 3 is more costly and is expected to take significantly longer to implement and will have far greater change management challenges.

Therefore, Alternatives 1 and 3 do not address the short and mid-term business and finance requirements. Alternative 2 extends the life of the current asset and is also the lowest risk alternative.

The recommendation is to proceed with Alternative 2, upgrade the current PeopleSoft Financials environment from Release 8.0 to Release 9.0

2. Problem / Opportunity / Drivers

PeopleSoft Financials release 8.0 SP3 is no longer supported by the product vendor. The application support ended on June 30, 2007, and there is no additional extended support available. OCIO and ABSU sustainment teams may not be able to support future business requirements without additional customization to the current platform. Therefore, the sustainment costs for current PeopleSoft release 8.0 are expected to increase due to additional resources required to investigate alternate solutions to business requirements and to maintain the customized application. Furthermore, the application has changed significantly since the implementation in 2002, and each time additional functionality is deployed, there is an increased potential for new problems to be uncovered (for example, FY2007 Year End Closing: 3 decimals allocation issue).

With the upgrade to PeopleSoft Enterprise Financial Management release 9.0, the product support is extended to September 2014.

Release	General Available Date	Updates, Fixes, Security Alerts & Upgrade Scripts	Tax, Legal & Regulatory	Extended Support Ends	Sustaining Support Ends
PS Financials 8.0 SP3	July 2002	June 2007	June 2007	Not Available	Not Available
PS EFM 9.0 (Financials)	Sep 2006	Sep 2011	Sep 2012	Sep 2014	Indefinite

Table 1: PeopleSoft Release Support Schedule

There are many new and or enhanced features in release 9.0 geared towards process optimization, such as the new features introduced to address Sarbanes Oxley (SOX) and International Financial Reporting Standards (IFRS) compliance. Also, the new Architecture features standard archiving tools and a Service Oriented Architecture (SOA) compatibility which will improve integration capabilities.

Data integrity can be improved by focusing on three major categories:

a. Improving employee business process knowledge
b. Application editing which enforces the use of valid fields (for example: Department, Account)
c. Elimination of human intervention through the use of custom derivations of data in certain applications (mostly project related fields)

a) Improving employee business process knowledge

The Financials System was implemented in 2002 with a value proposition emphasizing productivity improvements through integrating operational to financial data. However, the customized integration was complex and relied heavily on the use of manual controls, monitoring and reconciliation of data by various groups in BC Hydro and ABSU. The numerous financial codes and business rules are not reflected in system edits, and not transparent to users relying on employee business process knowledge.

The application training focused on 'silo' processes. Most integrated or end-to-end business and process knowledge was retained by employees only. There has been limited continuous improvement and or updates to training materials aligning business and operational processes. Therefore improving employee business process knowledge is critical to improving data integrity. This process knowledge will be reinforced during the implementation of PeopleSoft release 9.0

b) Application editing which enforces the use of valid fields

The application as it is currently configured will validate individual field values at the time of data entry. This includes the use of the standard chartfields (Business Unit, Department, Account, Product, Operating Unit, and Project ID). While the application can ensure that individual field values are valid, it cannot apply business rules to ensure that valid combinations of fields are entered.

There has been concern about data integrity as it relates to chartfield usage. In-fact, there are instances where incorrect chartfields have been used for transactions which have then been corrected in the GL journal as opposed to the source system. This approach leads to reconciliation challenge between the source systems.

The current implementation of PeopleSoft Financials is not using the delivered Chartfield Combination Editing (Combo Edits) functionality. This decision was made during the initial implementation of PeopleSoft and may have been the result of performance related problems that exist in the earlier versions of PeopleSoft 8.x (namely 8.0 and 8.4). The performance related problems have been addressed in more recent releases of the product and this functionality should be deployed as part of the upgrade.

A brief discussion about the functionality offered by use of Chartfield Combination Editing follows:
Chartfield combination edits set and enforces criteria for filtering undesired journal entry lines to the ledgers. Combination editing can take place in general ledger feeder applications or set up so that only the general ledger journals will execute the combination edits. Either approach will result in similar combination rules enforcement.

Chartfield Combination Editing compares the chartfield combination to the definitions and rules governing the defined chartfield combinations. For example, if you define some rules and chartfield associations, the Chartfield Combination Editing uses something like an if-then test to ensure that entries conform to the defined combination rules and definitions. The deployment of Chartfield Combination Editing will improve data integrity at the time of entry.

c) Elimination of human intervention through the use of custom derivations
The Project Costing module is the 3rd most customized PeopleSoft Financials module. Since implementation, the Project Costing module has accumulated 27 million rows of project related data and with over 120 fields at the column level. The data in Project Costing either relies on a single feed from one other PeopleSoft module or dual feeds from other PeopleSoft modules, as well as other custom integrations to other applications. These multi-data flows into the Project Costing module have created data inconsistencies and reconciliation issues because of various customizations. Furthermore, the business model representation (Project Costing Business Unit (PCBU)) in the Project Costing module and its integration with other business applications, has limited the flexibility to adapt to changing business requirements.

The inflexibility was highlighted during recent substantial business model changes.

a. Removal of internal billing (Finance Accountability Infrastructure Project, known as FAIP)
b. Implementation of direct charging through the use of the Operating Unit (Finance Simplification Initiatives, known as FSI)
c. Chart of account changes, product and resource codes clean-up (FSI)

Other important drivers for the upgrade of PeopleSoft Financial are the dependencies of Business Groups projects such as Procure-to-Pay (P2P), Property Information Management System (PIMS), EARG Work Management and Enterprise Application Integration (EAI) Upgrade. There is increased risk for these projects which require system integration to a financial system which is no longer support by the product vendor. Additionally, the upgrade of PeopleSoft Financials may provide opportunities for these projects to realign with new and improve process controls and functionality for data input, processing and output.

As a side benefit, the PeopleSoft Financials Upgrade will also provide an opportunity for IT resources to development product knowledge which can be re-deployed to other projects such as the PeopleSoft Human Resources Upgrade after the completion of analysis and design phases which will help reduce risk to these projects due to product knowledge gaps.

Summary of Benefits to upgrade PeopleSoft Financials:

- Supports desired business requirements, codes and accounting model changes
- Reduces application customizations
- Improved data integrity of financial transactions due to chartfield combination editing
- Provides opportunity for the clean-up of historical codes and eliminate data duplication
- Improve and where possible streamline integration with other applications
- Addition of an archiving solution
- Re-establish application and business process knowledge
- Provides a vendor supported application with improved functionality for integration with other projects (PIMS, P2P, Work Management)

3. Background

The current Financial System was implemented in 2002. Since this time, PeopleSoft Financials has not been upgraded even though the ERP value proposal suggests that new functionality will be leveraged as new releases become available. The current PeopleSoft Financials Release 8.0 SP3 is no longer supported by the vendor.

As of FY2006, there are a total of 7,768 customizations in PeopleSoft Financials, Enterprise Performance Management (EPM) and Budget Modules at BC Hydro – for further information, refer to Appendix 1.

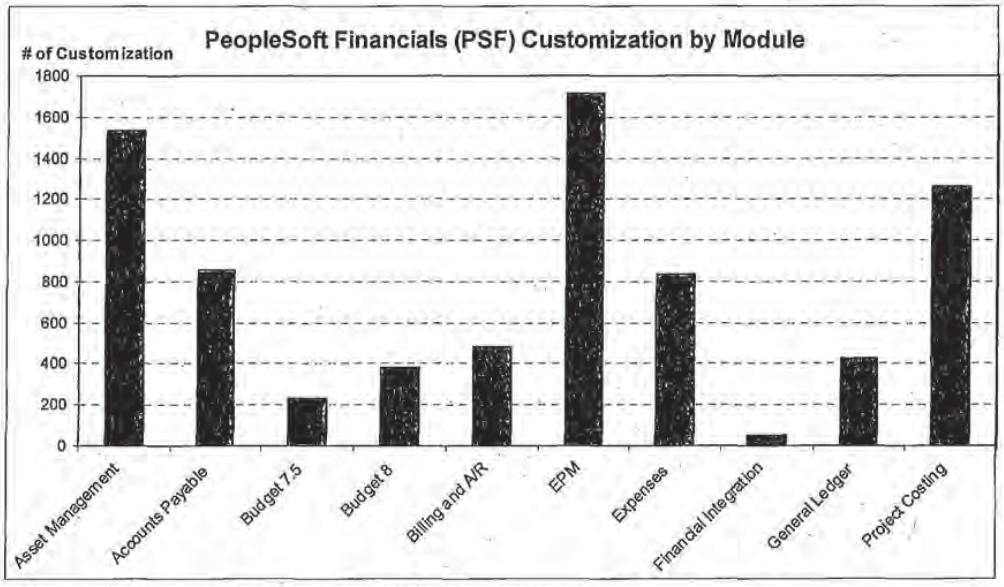


Table 2: Number of PeopleSoft Financials customization by Module

Of these, there are 5,437 customization related to PeopleSoft Financials.

On September 2006, BC Hydro announced a significant business reorganization in which, Lines of Businesses and Service Organizations were realigned to newly formed Business Groups. These changes have been reflected in the Financial Reporting system (primarily, EPM) and the PAHR Reporting system to support the financial statements and resource management reporting requirements. However, no changes have been made to transaction processing, which remains in the previous LoB/SO structure. The primary reason for this is that current financial and system models are tightly integrated which limit the ability to

handle organizational, accounting and business model changes and the implementation of these changes would require a significant data conversion.

Similar limitations were encountered during the Finance Simplification Initiative (FSI). In the current PeopleSoft Financials integration model, the complete implementation of the revised product and resource codes is not possible without further de-customization of existing programs, new customization and the development of new conversion programs.

The PeopleSoft Financials upgrade will provide an opportunity to firstly align the business model to the financial system model and secondly convert existing transaction processing objects as well as improve the system integration model to provide better business flexibility.

4. Key Assumptions

PeopleSoft Enterprise Financials Management Release 9.0 was released in September 2006. PeopleSoft has no plans to provide a direct upgrade path from release 8.0 SP3 to release 9.0. In order to perform an upgrade to release 9.0, a multi-upgrade approach will be required (i.e. upgrade from release 8.0 SP3 to release 8.9, and then upgrade from release 8.9 to release 9.0). This approach will be transparent to the users and is needed for data migration purposes only.

The key assumptions are:

a. New and revised business and accounting coding rules, and the rationalization of Departments, needs to be completed by February 2008. This requirement will impact IT analysis and design, including data conversion.

b. Business Analysis and Design needs to be initiated as soon as possible. The complexity of IT architecture and design relies on these initiatives:
   - Review and address constraint imposed by Project Costing Business Units (PCBU)
   - Re-align / re-engineer Project Tree and customizations related to Projects
   - Review Asset Management structure
   - Codes and Data clean-up related to FAIP and FSI to reflect accounting rules in the systems
   - Streamline and improve integration Touch Points and development of code translators

c. The Enterprise Business Reporting (EBR) Phase 2 (Financial and Management Reporting) will be delayed until the completion of business and accounting coding rules. Due to the change of interface and possibly new business requirements, there may be additional costs associated to the revision of EBR Architecture, Data Model and ETL.

d. The financial processes and requirements will utilize delivered application functionality, unless it compromises the operation, or is determined impractical to implement.

e. Subject matter experts from Finance and Business Groups will provide timely advice and resolution relating to business and financial coding and processing rules, financial controls and measures. In addition, these resources will participate in the project as and when required for the validation and verification of accounting model and rules, change management, development of test plan and test scripts including user acceptance testing, and report requirements. These roles will be defined in greater detail in the Project Charter.

f. Over the longer run and maturity of the application, sustainment costs may decrease. However, for the first 3 years, the cost of sustainment will be slightly higher for application stabilization and to support end-users with potential new requirements, for example, Finance Simplification Initiative.

g. This project may utilize other technical skills, for example, technical skills from Accenture Delivery Centre. To ensure deliverables for each phase, the project will segment the ABSU labour contract costs into smaller phased Statements of Work.

5. Alternative Analysis

5.1 Alternative 1: Do Nothing (Status Quo)

This alternative will result in an incremental sustainment costs estimated at $200k per annum for additional support needed. Future business requirements may not be supported without additional customization.

PROS	CONS
Low incremental costs	Re-development of interfaces for PIMS, P2P, EARG WM
	High risk to business if failure occurs during critical times
	May delay HR initiatives

5.2 Alternative 2: Upgrade PeopleSoft Financials with specific pre-defined business and data processes improvements

The initial project cost is estimated at $7M and proposed implementation in March 2009.

PROS	CONS
Provides additional 5 years of vendor support (without extended support) Allows time for other platform decisions and vendor/product evolution to occur	Delays IT Review vision – Consolidated Enterprise System
Reduces business risk due to unsupported application	Upgrade costs exceed sustainment costs
Provides additional functionality – as per original ERP business strategy • GL combo editing • Asset Tree Structure • Better linkage between Projects to Assets	Impact financial community • Training • Processes
Employees and IT outsourcer are familiar with current PeopleSoft system so product knowledge exists which will minimize risks due to knowledge gaps.	
Interfaces can be built to a supported system and project efforts can be coordinated • PIMS, P2P, EARG WM	May delay project(s) integration schedules
Accounting codes can be updated during data migration (i.e. FSI work)	
Integration improvements can be made to better represent the business in GL	

5.3 Alternative 3: Re-platform to SAP

The estimated cost to re-platform to SAP is $30M to $40M. Implementation will likely take 2 to 3 years. The additional licensing cost is $10M

PROS	CONS
Provides newly supported system, and reduces business risk	Will delay other projects by at least 1 year
Build interfaces to a supported system (PIMS, P2P, EARG WM)	Neither BCH nor ABSU have experience with SAP Financial systems increasing risk
Savings of vendor maintenance costs for PS at $400K per year	Cost of new license maintenance is likely $2 million per year
	Change management challenges will be great
	Operating costs are expected to be higher then current PeopleSoft

6. Financial and Non Financial Evaluation

The BC Hydro internal costs of $1.035M represents estimated actual chargeable hours by BC Hydro employees to the project. This cost is associated to direct full-time participation of specific BC Hydro employees from Finance and Business Groups for various business processes, controls and compliance, testing, conversion, verification and validating financials tasks. It is assumed that the affected departments may need temporary staff to fill the work of these employees that were seconded to work full-time (at specific intervals) in the project. External costs are the combination of ABSU employees and consultants from Accenture $4.035M, and other part-time external subject matter specialists, $545k. Refer to Section 12.2 for a detailed computational approach to labour cost estimates and to Section 10 for a breakdown of costs by project phase. The total estimated project cost is $7M (see Figure 3 below)

	Head Count	FTE	$$$
BC Hydro	42	8.85	1,035,450
ABSU	26	14.25	4,034,745
Other	4	2.75	544,500
	72	25.85	5,614,695
15% Contigency			842,204
Potential Hardware Costs			528,244
ESTIMATED TOTAL COSTS			6,985,143

Table 3: Estimated Project Budget

Contingencies of 15 percent cover all labour estimates in accordance with industry standard practice.

The IT hardware required to support the PS release 9.0 is estimated at $528k. Refer to Section 12.3 for details of Estimated Hardware Costs.

7. Risk Assessment and Mitigation

Alternative 1: Do Nothing (Status Quo)

Risks	Risks Mitigation
Re-development of interfaces for P2P, PIMS, EARG Work Management at a future upgrade time	Cannot be mitigated
Product failure due to unsupported environment by the vendor	Increase ABSU resources at estimated annual fee of $200k. This however, does not eliminate the risk

Alternative 2: Upgrade PeopleSoft Financials with specific pre-defined business and data processes improvements

Risks	Risks Mitigation
Delays for P2P, PIMS, EARG WM and EAI Upgrade projects	Immediate commitment of BC Hydro Executives and Senior Management Team to upgrade PeopleSoft Financials that will provide a stable and reliable platform for these projects for current and future phases
Participation of business and finance resources	Official announcement and communication to One Finance Team and the business community A dedicated Enterprise Business Applications, OCIO project information and support website Advance scheduling of business and finance resources to avoid competing with Budget FY2009/10/11, RRA and Financial Year End Deferral of Enterprise Business Reporting (EBR) Phase 2, that delivers financial and management reporting to July 2008 to be delivered in the time frame as this PeopleSoft Upgrade project
Project Scope	Commitment to complete the scope of requirements with Finance and Business community by February 2008, and segmenting these requirements as specific initiatives that will be executed concurrently with the PeopleSoft Financials Upgrade
In order to perform an upgrade to release 9.0, a multi-upgrade approach will be required (i.e. upgrade from release 8.0 SP3 to release 8.9, and then upgrade from release 8.9 to release 9.0).	Conduct testing to use the delivered PeopleSoft conversion tools from release 8.0 SP3 to release 8.9, and from release 8.9 to 9.0. These delivered conversion tools will be tested with common Oracle platform. Where delivered conversion tool is not available or not fitting, manual conversion will be used.

Continue ... Alternative 2: Upgrade PeopleSoft Financials with specific pre-defined business and data processes improvements

Risks	Risks Mitigation
The Enterprise Business Reporting (EBR) Phase 2 (Financial and Management Reporting) will be delayed until the completion of business and accounting coding rules. Due to the change of interface and possibly new business requirements, there may be additional costs associated to the revision of EBR Architecture, Data Model and ETL.	For accountability and financials reporting, continue to use PeopleSoft Enterprise Performance Management (EPM) for BPR/BTA to June 2009. The costs associated to financials reporting have been included in the FY2009 EBR Net New Capital Improvements Plan.

Other risks include: change management and training, retention of knowledge, implementation overlaps with Financial Year End.
For risks associated with change management, training and retention of knowledge, the mitigation strategy is to develop a centralized Business Intelligence Competency Centre (BICC), which consists of members from financial and business community, to assist and support BC Hydro employees in the change. Eventually, the BICC will evolve into a knowledge and training centre for existing and new BC Hydro employees.

The risk of implementation overlaps with Financial Year End, can be mitigated with the review of Financial Year End activities for FY2008, with the objective to improve the transition of financials and organization changes during year end, the development of code translator or conversion programs, and the Code of Account Change project, that empower Business Groups to identify and monitor code changes.

Alternative 3: Re-platform to SAP

Risks	Risks Mitigation
Significant delay to other projects	No mitigation
Lack of experience with SAP Financial systems	Provision of in-house and external training, extend the delivery schedule
Significant sustainment and upgrade costs	No mitigation
Enormous change management over a 2 years period	No mitigation

8. Value Realization / Performance Measures / Post Expenditure Review

From an ***IT perspective***, PeopleSoft Enterprise Financial Management Release 9.0 provides:

- The continuation of vendor provided fixes, security alerts, upgrade scripts, and updates for tax, legal and regulatory. Additionally, the product support will be extended and there is an indefinite sustaining support.
- Standardized Archiving Solution
- Tree Manager – performance improvements for large trees with web-server setting changes
- System Performance Monitor – real-time and historical performance metrics that enables administrators to rapidly track and trend system response times across the various tiers of the PeopleSoft system and identify bottlenecks

- System Maintenance – change assistant and impact analyzer – that enables the assembly and organizing of steps to apply patches and fixes for maintenance updates, and interactive workbench to determine relationships of PeopleSoft definitions in a hierarchical view

From a ***Business perspective***,

- The Service Oriented Architecture (SOA) that enables standard use of web services – for such things as business integration and possibly improved GL combo-editing
- Re-alignment of IT Architecture Model to a GL Centric model, with single feed to ensure data integrity of GL with sub-ledgers through GL combo edits, and control accounts
- Re-address Project Costing, where projects to be driven by Capital and Initiatives, project-based cost-plus billings, re-alignment/re-engineering of Project Trees
- Codes and Data clean-up (FAIP and FSI initiatives), to reflect accounting rules in the systems
- Reduction of data duplication in various Systems, re-engineering of the functionality of the projects module to minimize financial codes in operation systems
- Streamline and improve integration Touch Points, develop code translators or conversion programs, to address and remove the constraint imposed by PCBUs
- Reduction of customization, process improvements (e.g. Asset Hierarchy), derivation of resource codes from the Payables process based on standard industry code (SIC) assigned to vendors
- Strengthen security and IT governance by re-defining roles
- Streamline reports with the focus to use Enterprise Business Reporting (EBR), and to develop reporting strategy and framework

A post expenditure review will be conducted using project deliverables developed during project compared against requirements for functionalities.

9. Project Plan and Schedule

Project Scope

- Asset Management, Accounts Payable, Accounts Receivable, Billing, Contract, Expense, General Ledger, Project Costing
- Integration to and from Enterprise Business Applications
- Integration to and from Other Specific Business Applications

Project Plan

- Set-up sustainable production, sustainment and development infrastructure and application regions
- Review business and process requirements for the Business Analysis and Design. Start-up OMA initiatives to:
    - Review and address constraint imposed by Project Costing Business Units (PCBU)
    - Re-align / re-engineer Project Tree and customization related to Projects
    - Re-model Asset Management
    - Codes and Data clean-up related to FAIP and FSI to reflect accounting rules in the systems
    - Streamline and improve integration Touch Points and development of code translators
- Conduct Fit Gap Analysis, verify and validate business and financial processes
- Conduct IT Analysis and Design, validate business and financial rules
- IT Build, ensure business and financial processes and rules are incorporated
- Plan and execute Unit, System, End-To-End, and Users Acceptance Testing

- Trained IT resources to be re-deployed to PeopleSoft Human Resources Upgrade after the completion of the PeopleSoft Financials Upgrade analysis and design phase
- Align dependent projects (P2P, PIMS, EARG WM, EAI Upgrade) to PeopleSoft Financials release 9.0

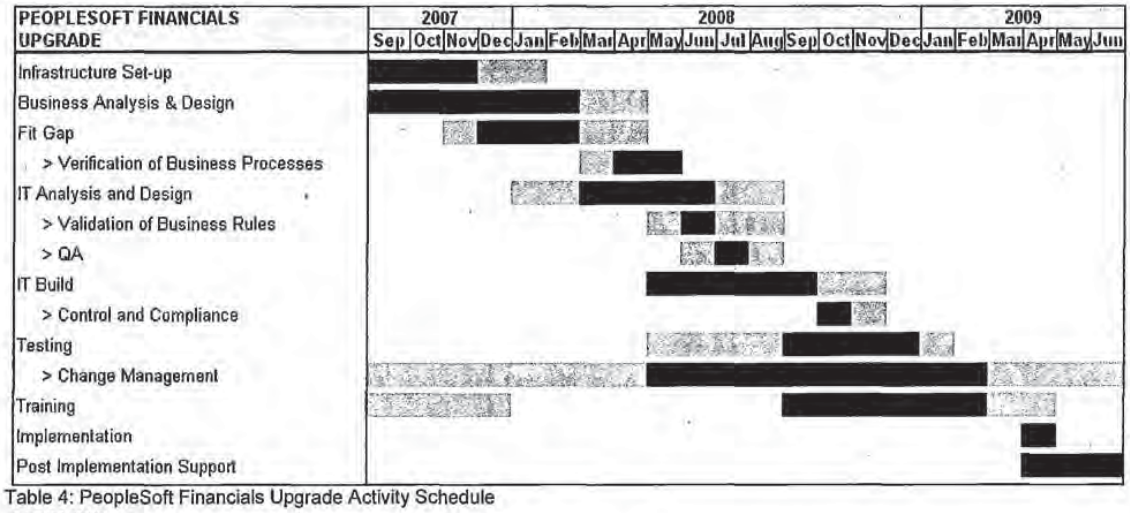


Table 4: PeopleSoft Financials Upgrade Activity Schedule

LEGEND:

Preliminary / Post (Follow-up) Task
Actual Task Duration
Implementation April 1, 2007

Project Resource Requirements

Total of resources required by Business Group to participate in the PeopleSoft Financials Upgrade. Resources tabulated are by Head Count.

PEOPLESOFT FINANCIALS UPGRADE	BUSINESS GROUP				
	CORP	EARG	FOPS	CC&C	PWX
Asset Management	1	1	1		
Accounts Payable	1	1	1	1	1
Accounts Receivable	1		1		1
Billing	1		1		1
Contract	1		1		
Expenses	2	1	1	1	1
General Ledger	3	1	1	1	1
Project Costing	2	1	1	1	1
Project Director	1				
Project Managers/Co-ordinators	2				
Change Management	2		1		
Internal Controls and Compliance	1				

Table 5: Resources requirement by Business Group

10. Project Costs

The table below indicates sustainment capital work for fiscal year: 2008, 2009 and 2010.

PEOPLESOFT FINANCIALS UPGRADE	FY2008	FY2009	FY2010	TOTAL	CLASS
Infrastructure Set-up (Hardware)	428,244	100,000		528,244	CHW
Business Analysis & Design	457,509	0		457,509	CSW
Fit Gap	148,493	164,866		313,359	CSW
> Verification of Business Processes	247,455	0		247,455	OMA
IT Analysis and Design	565,305	1,007,630		1,572,935	CSW
> Validation of Business Rules					
> QA					
IT Build	0	2,081,777		2,081,777	CSW
> Control and Compliance					
Testing	0	394,115		394,115	CSW
> Change Management	0	789,750		789,750	OMA
Training	0	100,000		100,000	OMA
Implementation					
Post Implementation Support	0	0	500,000	500,000	OMA
	1,847,006	4,638,138	500,000	**6,985,143**	

Table 6: Estimated Total Project Costs

CLASS Legend:
CHW: Hardware **CSW**: Software **OMA**: Non-Capital Costs

Explanation for Project Costs:

- *Infrastructure Set-up (Hardware)*: refer to Appendix Section 12.3 for further information.
- *Business Analysis & Design*: to conduct technical investigation for the proposed accounting model and other Finance Simplification Initiative, for example, control accounts, combo edits, project costing, asset management and financials integration.
- *Fit Gap*: to compare existing application technical functionalities to the new application technology, determine the features and functions of the new application to be design.
- *IT Analysis and Design*: This is primarily a design stage, whereby the business and finance processes have been agreed and signed-off by Finance. The QA is to ensure that the designs are complying financial controls and complying to business rules.
- *IT Build*: Technical programming the application, to include unit and system testing. Control and compliance review is required to ensure the application is built as designed.
- *Testing*: Conduct User Acceptance Testing, Change Management and Communication, and Training for Trainers and End Users.

Assumptions:

- 1 FTE = 130 hours
- BC Hydro Average Employee Rate (per hour) = $50
- ABSU Estimated Resource Rate (per hour) = $121
- External Consultants Rate (per hour) = $100

11. Recommendation

Proceed with Alternative 2 at an estimated total cost of $7M. This alternative will support business requirements, process changes and improvements, integrity of financial data, and provide other projects with a vendor supported application and a sustainable application solution.

12. Appendix

12.1 Customization

Table 7: Summary of Customization by Module

PeopleSoft Financials Module	Total
Asset Management	1534
Accounts Payable	856
Budget 7.5	231
Budget 8	384
Billing and A/R	479
EPM	1716
Expenses	833
Financial Integration	52
General Ledger	425
Project Costing	1258
	7768

Table 8: Customization by Object Type

Object Type (Revised)	Total
Access Group	5
Application Engine	1
Application Engine PeopleCode	24
Application Engine Program	130
Application Engine Section	228
Application Engine SQL Object	92
Application Message Gateway	2
Batch	325
Components	304
Crystal Report	86
Field	764
Impromptu Report	71
Interface	313
Job Definition	18
Menu	91
Message	129
Model	24
nVision Report	140
Page	397
PeopleCode	99
Process Definition	208
Query	558
Record	1949
Report	70
Rule	570
Server	96
SQL	585
SQR Report	273
Translation Rule	216
Grand Total	7768

12.2 Explanation for the computation of estimated project cost in Section 6

The tables below show the methodological approach of estimating project cost from Business Groups' Head Count to User Count.

Based on the preliminary business requirements, we have estimated resources for BC Hydro 42 head count or ~~9.05 FTE from the following Business Groups~~:

PEOPLESOFT FINANCIALS UPGRADE	BUSINESS GROUP				
	CORP	EARG	FOPS	CC&C	PWX
Asset Management	1	1	1		
Accounts Payable	1	1	1	1	1
Accounts Receivable	1		1		1
Billing	1		1		1
Contract	1		1		
Expenses	2	1	1	1	1
General Ledger	3	1	1	1	1
Project Costing	2	1	1	1	1
Project Director	1				
Project Managers/Co-ordinators	2				
Change Management	2		1		
Internal Controls and Compliance	1				

Page Break

We have used this estimate to breakdown to application module basis – refer to the following tabulation:

Note: *130 hours per month = 1 FTE*		PROJECT DIRECT RESOURCES			
		BCH/ ABSU	User Count	FTE	Total FTE
Asset Management (ZBGs,GH)		BCH	3	0.25	0.75
Process improvements for Asset Detailing		ABSU	2	0.75	1.50
New function, Asset Hierarchy		Other	1	1.00	1.00
Accounts Payable (IBG,NY,GC,SP)		BCH	5	0.25	1.25

From User Count, we have estimated the FTE resources commitment required to provide the estimated Total FTE per application module.

BC hydro

BUSINESS CASE
Enterprise Financials Re-implementation

Note: 140 hours per month = 1 FTE		PROJECT DIRECT RESOURCES BCH/ ABSU	User Count	FTE	Total FTE
Asset Management	(GBGs,GH)	BCH	3	0.25	0.75
Process improvements for Asset Catalog		ABSU	2	0.75	1.50
New function: Asset Hierarchy		Other	1	1.00	1.00
Accounts Payable	(FBG,HY,GE,SP)	BCH	5	0.25	1.25
		ABSU	2	0.75	1.50
		Other	1	0.25	0.25
Accounts Receivable	(GBGs,GC)	BCH	3	0.10	0.30
		ABSU	2	0.50	1.00
		Other	0		0.00
Billing	(GBGs,GC)	BCH	3	0.10	0.30
		ABSU	2	0.50	1.00
		Other			0.00
Contract	(GBGs,GC)	BCH	2	0.10	0.20
		ABSU	2	0.50	1.00
		Other			0.00
Expenses	(GBGs,HS,GH)	BCH	6	0.10	0.60
		ABSU	2	0.50	1.00
		Other			0.00
General Ledger	(ABGs,GH,GC,SH)	BCH	7	0.20	1.40
		ABSU	4	0.50	2.00
		Other			
Project Costing	(GBGs,SH)	BCH	6	0.20	1.20
		ABSU	3	0.50	1.50
		Other			
Infrastructure		ABSU	3	0.50	1.50
Integration		ABSU	3	0.50	1.50
Project Director		BCH	1	0.25	0.25
Project Management/Co-ordination		BCH	2	0.50	1.00
		ABSU	1	1.00	1.00
		Other	1	1.00	1.00
Change Management		BCH	3	0.50	1.50
		ABSU	1	0.25	0.25
		Other	1	0.50	0.50
Internal Controls and Compliance		BCH	1	0.10	0.10

	Head Count	FTE	$$$
BC Hydro	42	8.85	1,035,450
ABSU	26	14.25	4,034,745
Other	4	2.75	544,500
	72	25.85	5,614,695

Using the FTEs we estimated Total Costs ($$$) for BC Hydro, ABSU and Other (Consultant), with the following assumptions:

- 1 FTE = 130 hours per month
- Project timeline = 18 months
- BC Hydro average employee rate (per hour) = $50
- ABSU average employee rate (per hour) = $121
- Other – consultants (per hour) = $100
- 15% contingency was applied based on other companies upgrade experiences.

The amount of $5,614,695 was added with a contingency of 15%, which is an estimated average incremental cost for upgrading release 8.0 to 8.9 and 9.0. Also, we have added hardware cost of $528k for a total project cost of $6,985,143

Labour costs are computed from Head Count multiply by the estimated FTE resources commitment and project timeline and the average labour rate per hour. For example, the total ABSU Head Count is 26 with 14.25 FTE. By using 14.25 FTE multiply with 130 hours per month, multiply with 18 months and average labour rate of $121/hour, the total ABSU labour cost is $4,034,745. To breakdown the ABSU cost by module basis, the same computation methodology applies. For example, ABSU costs for Accounts Payable module is: 1.5 FTE x 130 hours x 18 months x $121/hour = $424,710

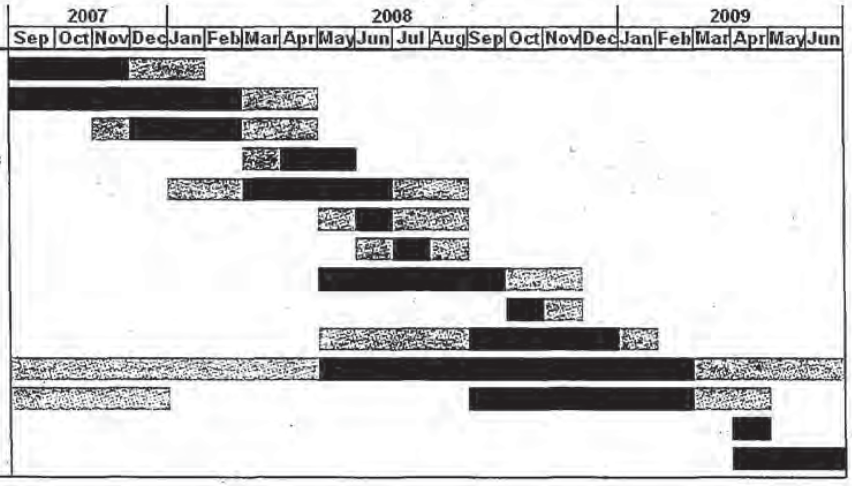
For consistency, we have used the ABSU standard which is, 1 FTE = 130 hours per month or 1,560 hours per annum. The FTE annual difference between ABSU and BC Hydro is 22.5 hours per FTE, and in this project the difference is very minimal = 22.5 x 8.85 FTE = 199.125 hours. In terms of total difference ($$$) = 199.125 x $50/hour = $9,956.25

12.3 Estimated Hardware Costs

The hardware estimated costs of $528k include technical resources. The hardware and technical resource requirements are similar to the PAHR Upgrade assessment. Refer to the attached document from Accenture Business Services of British Columbia..

PAHR Upgrade Sizing Estimate_Architectur

12.4 Estimated Labour Costs (Phasing)



	FY2008	FY2009	FY2010	TOTAL	CLASS
Infrastructure Set-up (Hardware)	428,244	100,000		528,244	CHW
Business Analysis & Design	457,509	0		457,509	CSW
Fit Gap	148,493	164,866		313,359	CSW
> Verification of Business Processes	247,455	0		247,455	OMA
IT Analysis and Design	565,305	1,007,630		1,572,935	CSW
> Validation of Business Rules					
> QA					
IT Build	0	2,081,777		2,081,777	CSW
> Control and Compliance					
Testing	0	394,115		394,115	CSW
> Change Management	0	789,750		789,750	OMA
Training	0	100,000		100,000	OMA
Implementation					
Post Implementation Support	0	0	500,000	500,000	OMA
	1,847,006	4,638,138	500,000	**6,985,143**	

PEOPLESOFT FINANCIALS UPGRADE	FY2008 BC HYDRO									FY2008 AESU + Others								
	AM	AP	AR	BI	CA	EX	GL	PC	FI	AM	AP	AR	BI	CA	EX	GL	PC	FI
Infrastructure Set-up (Hardware)																		
Business Analysis & Design	1.00	0.50	0.20	0.20	0.20	0.50	0.50	0.50	0.75	0.75	0.50	0.10	0.10	0.10	0.25	0.25	0.50	0.50
Fit Gap	0.25	0.20	0.10	0.10	0.10	0.10	0.25	0.20	0.25	1.00	1.00	0.25	0.25	0.25	1.00	1.00	1.00	2.00
> Verification of Business Processes	0.25	0.25	0.10	0.10	0.10	0.25	0.25	0.25	0.25	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
IT Analysis and Design	1.00	0.50	0.25	0.25	0.25	0.75	1.00	1.00	1.00	1.00	1.00	0.50	0.50	0.50	1.00	1.00	1.00	3.00
> Validation of Business Rules																		
> QA																		
IT Build																		
> Control and Compliance																		
Testing																		
> Change Management	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00									
Training																		
Implementation																		
Post Implementation Support																		

	FY2008	FY2009	FY2010	TOTAL	CLASS
Infrastructure Set-up (Hardware)	428,244	100,000		528,244	CHW
Business Analysis & Design	457,509	0		457,509	CSW
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Testing	0	394,115		394,115	CSW
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Training	0	100,000		100,000	OMA
Implementation					
Post Implementation Support	0	0	500,000	500,000	OMA
	1,847,006	4,638,138	500,000	**6,985,143**	

Inquiry of Expenditures related to the adoption of the SAP Platform Page 38 of 48

BCUC IR 1.18.1 Attachment 1

PEOPLESOFT FINANCIALS UPGRADE	FY2009 BC HYDRO																	FY2008	FY2009	FY2010	TOTAL	CLASS
	AM	AP	AR	BI	CA	EX	GL	PC	FI	AM	AP	AR	BI	CA	EX	GL	PC	FI					
Infrastructure Set-up (Hardware)																			428,244	100,000		528,244	CHW
Business Analysis & Design																			457,509	0		457,509	CSW
Fit Gap	0.25	0.20	0.10	0.10	0.10	0.10	0.25	0.20	0.25	1.00	0.50	0.20	0.20	0.20	0.50	0.50	0.75	0.75	148,493	164,866		313,359	CSW
> Verification of Business Processes																			247,455	0		247,455	OMA
IT Analysis and Design	0.25	0.20	0.10	0.10	0.10	0.10	0.25	0.20	0.25	1.00	1.00	0.50	0.50	0.50	1.00	1.50	1.50	3.00	565,305	1,007,630		1,572,935	CSW
> Validation of Business Rules																							
> QA																							
IT Build	1.00	1.00	0.25	0.25	0.25	1.00	1.00	1.00	2.00	1.50	1.00	0.75	0.75	0.50	1.00	2.00	2.00	3.00	0	2,081,777		2,081,777	CSW
> Control and Compliance																							
Testing	1.00	1.00	0.50	0.50	0.50	1.00	2.00	1.00	1.00	1.00	0.50	0.20	0.20	0.20	0.50	0.50	0.75	1.00	0	394,115		394,115	CSW
> Change Management	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50										0	789,750		789,750	OMA
Training																			0	100,000		100,000	OMA
Implementation																							
Post Implementation Support																			0	0	500,000	500,000	OMA
																			1,847,006	4,638,138	500,000	**6,985,143**	

Table 9: Phasing of project labour by BC Hydro, ABSU and Other

8:45 a.m., 2007/12/12

Inquiry of Expenditures related to the adoption of the SAP Platform Page 39 of 48

BCUC IR 1.18.1 Attachment 1

BC Hydro
PAHR Upgrade Sizing Estimate

TECHNICAL ARCHITECTURE

Version 1.1
11/7/2007 3:21 PM

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Technical Architecture

Last revision: 2007-11-08 8:14 AM

Table of Contents

1.0 INTRODUCTION 3

2.0 TECHNICAL ARCHITECTURE 3

2.1. PRELIMINARY SERVER SIZING 3
2.1.1. Current Production environment 3
2.1.2. Upgrade Plan 3
2.1.3. Server sizing for sustainment / project environment 3
2.1.4. Server sizing for production environment 3
2.2. TECHNICAL REQUIREMENTS 4
2.2.1. Regions Requirements 4
2.2.2. Disk Storage (DASD) Requirements 4
2.3. HARDWARE AND SOFTWARE CONFIGURATION AND APPROACH 5
2.3.1. Hardware configuration 5
2.3.2. Software configuration 6
2.3.3. HCM 9.0 Architecture 7

3.0 COST ESTIMATES 8

3.1. ONE-TIME COST 8

4.0 APPROVAL AND CHANGE HISTORY 9

4.1. APPROVAL CONTROL 9
4.2. DOCUMENT CHANGE LOG 9

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1.0 Introduction

This document summarizes the technical sizing, technical requirements as well as the recommended hardware and software configuration and approach for the upgrade of BC Hydro's Pay and Human Resources system from HRMS v8.0 to HCM v9.0.

2.0 Technical Architecture

2.1. Preliminary Server Sizing

2.1.1. Current Production environment

At the time of writing this report, BC Hydro is running PeopleSoft HRMS 8.0 on PeopleTools release 8.22.

2.1.2. Upgrade Plan

BC Hydro plans to upgrade to PeopleSoft HCM 9.0 on PeopleTools release 8.49.

2.1.3. Server sizing for sustainment / project environment

Server sizing is based on ten regions that are going to be created for the future HCM 9.0 sustainment and project.

The following section outlines the PeopleSoft HCM sustainment architecture within the BC Hydro environment. Refer to the diagram on section 2.3.3 for a visual depiction of the architecture.

Web Servers – W3T3 Web server: SUN-Fire T200, a shared web server.
A separate WebLogic instance is configured on each server.
The Application Messaging gateway also resides on this server.

Application/Batch/Database Server – EDMHRS3: Application server: IBM P595 AIX 5.3, 4CPU, 16GB RAM, 1.4TB DASD
The PeopleSoft report repository also resides on this server.
Oracle database is the RDBMS used for the PeopleSoft database.

Batch/File Server (NT) – TEDMBCHPAHR3: IBM System x3850 3.3GHz Server 8CPU, 8GB RAM, 300GB DASD
The PSNT process scheduler resides on this NT server.
The NT Batch Server also acts as a file server.

2.1.4. Server sizing for production environment

The following section outlines the PeopleSoft HCM production architecture within the BC Hydro environment. Refer to the diagram on session 2.3.3 for a visual depiction of the architecture.

Web Servers – W3PAHR (w3p3 and w3p4) SUN-Fire T200, shared web server.
w3pahr is an alias to a Cisco switch which redirects traffic to 2 separate servers (w3p3 and w3p4).
The Cisco switch provides load-balancing and failover capabilities (based on port and TCP/IP).
A separate WebLogic instance is configured on each server.
The Application Messaging gateway also resides on these servers.

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Application/Batch/Database Server – EDMHRP3 (Primary) and EDMHRP4 (Standby) The primary server will be: IBM P595 AIX 5.3, 4CPU, 16GB RAM, 1.4TB DASD
There are two application servers in the production architecture for failover.
Oracle database is the RDBMS used for the PeopleSoft database.

Batch/File Server (NT) – EDMBCHPAHR3: IBM System x3850 3.3GHz Server 8CPU, 8GB RAM, 300GB DASD
The PSNT process scheduler resides on this NT server.
The NT Batch Server also acts as a file server

2.2. *Technical Requirements*

2.2.1. Regions Requirements

A region encompasses the Oracle database, all PS components on Unix and Windows servers, and Web server components. A total of ten regions are planned for sustainment/project server, with one region for production.

	Upgrade Project	*Sustainment*
1	HR9DMO – Peoplesoft delivered, with demo data	HR9DMO – Peoplesoft delivered, with demo data
2	HR9SUS1 – Development / Unit test	HR9SUS1 – Maintenance
3	HR9SUS2 – Unit test 2	HR9SUS2 – User testing
4	HR9SUS3 – System Test	HR9SUS3 – Pseudo Production
5	HR9SUS4 – Parallel Test	HR9SUS4 – Staging
6	HR9SUS5 – Performance Test	HR9SUS5 – Tax Updates
7	HR9SUS6 – User Training	HR9SUS6 – Project region
8	HR89DMO – Upgrade script	HR9SUS7 – Project region
9	HR89SUS1 – Upgrade script	HR9SUS8 – Project region
10	HR89SUS2 – Upgrade script	HR9SUS9 – Project region

Production:
HR9PRD - Production region

2.2.2. Disk Storage (DASD) Requirements

1.4TB disk storage is required for production server and 1.3TB disk storage is required for sustainment/project server based on the current HRMS 8 environment.

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2.3. *Hardware and Software Configuration and Approach*

2.3.1. Hardware configuration

HRMS 9.0 Hardware Configuration				
Physical Machine	**Environment (LPAR)**	**PAHR Servers**	**No. of CPU's**	**Comments**
EDMHRP4	Production Failover	Application Server Database Server Process Scheduler	1	IBM 595 (New) The Production Failover environment will be operating with reduced capacity; performance may be degraded. However, resource distribution between Production failover and Development/Test environment can be adjusted, if necessary.
EDMHRS3	Development/Test	Application Server Database Server Process Scheduler	4	
High Availability Cluster Multiprocessing (HACMP)				Failover capability with 5 minutes
EDMHRP3	Production	Application Server Database Server Process Scheduler	4	IBM 595 (New)
W3P3/W3P4	Production	Web Server	2	Sunfire T200 (Existing server)
EDMBCHPAHR03		Batch/Report Server	4	Windows 2003 server (New)
W3T3	Test	Web Server	4	Sunfire T200 (Existing server)
TEDMBCHPAHR3		Batch/Report Server	1	Windows 2003 server (New)

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2.3.2. Software configuration

- Web server:
  Operating System SUN Solaris 10
  Weblogic 9.2 MP1 wls92mp1-p2
  JAVA runtime environment JRE 1.5.0
- Database Server:
  Oracle 10gR2 Version 10.2.0.3.0
- Application server/Batch server:
  IBM AIX 5.3 64bit Maintenance Level 3
  BEA Tuxedo 9.1 RP036.
  COBOL Compiler: Micro Focus Server Express 4.0 SP2
- Batch/File server:
  Windows 2003 Server
  BEA Tuxedo 9.1 RP036

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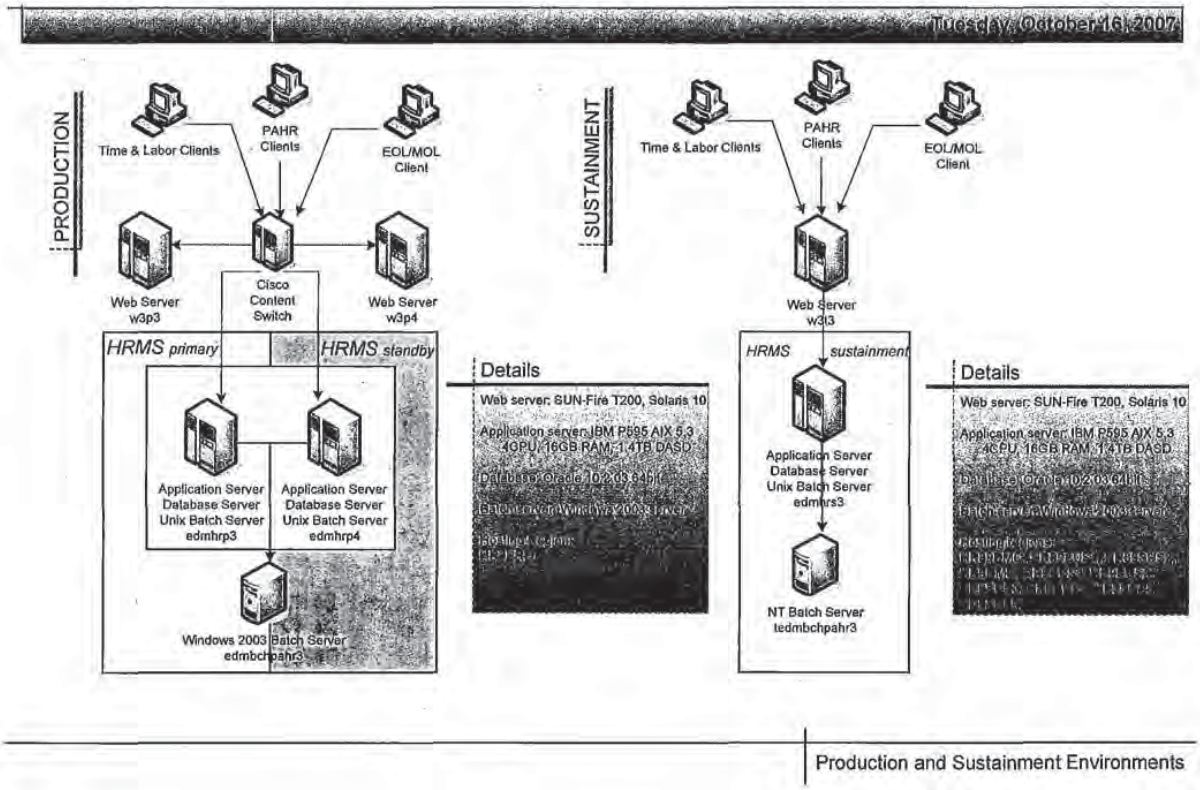
2.3.3. HCM 9.0 Architecture



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3.0 Cost Estimates

3.1. One-time Cost

Description	Unit	Unit Cost (CAD)	Total Estimated Cost
One-time Cost of Implementation			
Microfocus Cobol Compiler		$ 0	$ 0
Microfocus developer license		0	0
Oracle 10g EE (covered under BCH Enterprise license)		0	0
PL/I Compiler for AIX per user license			
SAS license			
ESP Agent			
BMC Patrol for Intel (CA)			
IBM 595 4-CPU's Production & Test (Application / Database / Process Scheduler)	1	200,000	200,000
IBM 595 5-CPU's Production Failover & Development (Application / Database / Process Scheduler)	1	250,000	250,000
W3P3/P4 W3T3 Web Servers		0	0
EDMBCHPAHR3 Production Batch/Report Server	1	24,122	24,122
TEDMBCHPAHR3 Test Batch/Report Server	1	24,122	24,122
Miscellaneous hardware for two AIX servers (reserved)	1	30,000	30,000
			$ 528,244

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4.0 Approval and Change History

4.1. Approval Control

This PAHR Upgrade Sizing Estimate Technical Architecture was reviewed and approved by:

Marion Fukui, Project Manager _____ Date _____

4.2. Document Change Log

Date	Author	Change Description
11/05/2007	Sheila Barnes	Finalized for submission
10/30/2007	Sheila Barnes	Added cost estimates
10/29/2007	Sheila Barnes	Applied formatting
10/19/2007	Jing Cao	Revised to v1.1
10/12/2007	Jing Cao	Initial Draft

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BC Hydro

Financial Systems Replacement (FSR) Project

1.1.2 Project Charter (Version 4.3)

TABLE OF CONTENTS

1. PROJECT OVERVIEW 7

2. PROJECT OBJECTIVES AND PRINCIPLES 8

2.1. PROJECT OBJECTIVES 8
2.2. GUIDING PRINCIPLES 8
2.3. MEASURES OF SUCCESS 9
2.3.1. Project Success Measures 9
2.3.2. Business Success Measures 10

3. HIGH-LEVEL SCOPE 11

3.1. PROCESS SCOPE 11
3.2. ORGANIZATIONAL SCOPE 12
3.3. SAP FUNCTIONAL SCOPE 12
3.4. INTERFACE SCOPE 13
3.5. DATA CONVERSION SCOPE 13
3.6. REPORTING SCOPE 13
3.7. MISCELLANEOUS SCOPE 13

4. CONSTRAINTS AND DEPENDENCIES 15

4.1. CONSTRAINTS 15
4.2. PROJECT DEPENDENCIES / RELATED INITIATIVES 15
4.2.1. Financial Simplification Initiative phase 3 (FSI3). 15
4.2.2. International Financial Reporting Standards (IFRS) 15
4.2.3. Other Related Initiatives 16

5. PROJECT APPROACH 18

5.1. OVERALL APPROACH 18
5.2. HIGH LEVEL SCHEDULE 19
5.3. DELIVERABLE GROUPS BY PHASE 19

6. PROJECT ORGANIZATION AND GOVERNANCE 21

6.1. TEAM ORGANIZATION & RESPONSIBILITIES 22
6.2. TEAM STRUCTURE 28

7. PROJECT MANAGEMENT 29

7.1. PROGRESS REPORTING 29
7.2. SCOPE CONTROL 29
7.3. ISSUE MANAGEMENT 29
7.4. RISK MANAGEMENT 29
7.5. QUALITY ASSURANCE 30
7.6. PROJECT MANAGEMENT INFORMATION SYSTEM (PMIS) 30

8. BUDGET 31

9. BENEFITS REALIZATION 32

9.1. BENEFITS IDENTIFIED 32
9.2. INCREMENTAL COSTS IDENTIFIED (ANNUAL) 32
9.3. BENEFITS REALIZATION MANAGEMENT 32

10. REFERENCES 33

Document Information and Revision History

Document Owner	Project Manager, Hugh Smith
Document Purpose	The Project Charter defines the project scope, objectives, project team responsibilities, constraints and dependencies, and Project Manager's authority.
File Name(s)	1.1.2 FSRP Charter - v4.3.doc
Stored at	R:\1 Project Prep\1.1 Initiating\1.1.2 Charter\1.1.2 FSRP Charter - v4.3.doc
Original Author(s)	Project Team (BC Hydro)

Revision History:

Version	Date	Comments
1.0	July 10/08	Initial Draft by Ann-Margaret Tait
2.0	August 10/08	Updates by George and Ann-Margaret based on comments from initial steering committee meeting
2.1	Sept. 7/08	Updates by Ann-Margaret to incorporate additional comments
2.2	Sept. 15/08	Additional updates by Enn including incorporation of Steering Committee feedback
3.0	Sept 19/08	Additional updates by Enn to refine Charter as per Steering Committee feedback. Adopted as approved version for Blueprint Phase.
3.1	Oct 20/08	Enn updated Steering Committee and Project Core Team members (Gurj Parmar and Linda Valente)
4.0	Feb 23, 2009	Updated by Hugh Smith for implementation phases of the project
4.1	Feb 27, 2009	Updated by Hugh Smith with feedback from OCIO PMO group.
4.2	Mar 6, 2009	Minor wording updates by Hugh Smith per Steering Committee review. Current version approved by Steering Committee as of March 5, 2009 SC meeting.
4.3	Mar 23, 2009	Updated by Christine Griffiths as part of phase

Version	Date	Comments
		completion checks: updated cover sheet, header, document purpose, Approvals section

Approvals

Resource	Title	Project Role	Date	Signature
Charles Reid	CFO	Executive Sponsor	Mar 6, 2009	
Cheryl Yaremko	Chief Accounting Officer	Project Sponsor	Mar 6, 2009	
Trish Pekeles	Chief Strategy Officer	Member, Steering Committee	Mar 6, 2009	
Don Stuckert	VP and CIO	Member, Steering Committee	Mar 6, 2009	
Gurjit Parmar	EARG Finance Director	Member, Steering Committee	Mar 6, 2009	
Esther Leung	CC&C Finance Director	Member, Steering Committee	Mar 6, 2009	
Brian Tabe	Field Operations Finance Director	Member, Steering Committee	Mar 6, 2009	
Carol Richards	Corporate Finance Director	Member, Steering Committee	Mar 6, 2009	
Mike Standbrook	Chief Risk Officer	Member, Steering Committee	Mar 6, 2009	
Enn Kiudorf	SAP Enterprise Lead	SAP Enterprise Lead	Mar 6, 2009	
Hugh Smith	Contractor	Project Manager	Mar 6, 2009	

1. PROJECT OVERVIEW

This Project Charter describes the BC Hydro Financial Systems Replacement Project, defining its objectives, constraints, high level scope, and governance procedures. The Financial Systems Replacement Project will result in the replacement of the current Peoplesoft Financials (version 8) systems with SAP Financials.

The implementation of SAP Financials represents the second significant installation of SAP systems at BC Hydro, the first being Project Northstar which implemented the SAP Customer Care System (CCS) in December 2003.

Under BC Hydro's IT&T strategy, endorsed by BC Hydro's Executive Team in 2008, the SAP systems were identified as a "default solution" and supported by validation criteria to establish when the SAP systems should be a preferred solution.

The Project is being executed in two major phases, the first of which is now complete:

Phase 1: SAP Financials Blueprint / Discovery. During this phase, BC Hydro performed an assessment of SAP Financials and validated the initial decision that it meets BC Hydro's requirements. This work was completed in Q3 of F09, and resulted in a "go" decision for the finalization of design and implementation of SAP Financials.

Phase 2: SAP Financials Detailed Design and Implementation. Based on the decision to proceed with an Implementation Phase, BC Hydro will finalize the design and commence implementation of SAP Financials in Q4 of F09 with a target "go-live" date on or before April 1, 2010.

The Project Manager will be responsible for ensuring that work is aligned with the objectives and principles established under this document. Any update to the Project Charter must be reviewed and approved by the Project Steering Committee.

This Project Charter serves as the baseline reference document for the Project, against which all Change Requests will be assessed and measured. Taken together, the Project Charter and Change Requests will define the overall requirements, life, and measures of success for the Project.

2. PROJECT OBJECTIVES AND PRINCIPLES

2.1. Project Objectives

The objectives of this project are to:

1. Meet the requirements of the International Financial Reporting Standards (IFRS) project and the objectives of the Financial Simplification Initiative (FSI) by replacing BC Hydro's current PeopleSoft Financials system with SAP on or before April 1, 2010.
2. Deliver all entity-wide financial accounting and reporting, including external reporting that complies with International Financial Reporting Standards (IFRS), and regulatory reporting including the BCUC Annual Report. It also includes management reporting that supports cost and budget accountability, as well as other financial performance metrics. This will be supportive of a "one truth" approach to financial information that is understood and used across the company.
3. Implement new business processes that as much as possible:
    a. **Simplify and Standardize** BC Hydro's financial processes and reduce the complexity of the financial system environment,
    b. Provide **Efficiency through Automation** to reduce user-burden, reduce manual intervention, and create financial benefit through a reduction of the total cost of finance functions,
    c. Enable and Improve BC Hydro's **Internal Controls**.

2.2. Guiding Principles

In meeting the Project Objectives, the Project Team will endeavour to develop a solution that adheres as closely as possible to the following guiding principles:

- The Project will align with the IT&T Strategy to maximize the potential of a single-vendor enterprise systems environment to reduce the time and costs associated with maintaining, upgrading, and integrating separate systems; and to improve the overall effectiveness of BC Hydro's IT environment.
- BC Hydro will use the business processes inherent to the design of the SAP product. Any deviation from these inherent processes will require the approval of the Steering Committee.
- BC Hydro's use of SAP Financials systems will minimize customization and apply the generic processes provided through these systems on an entity-wide basis in

order to gain the advantages related to simplicity, and allowing for future integration as the IT strategy is implemented. Any customization must be recommended by the Core Project Team and approved by the Steering Committee.

- BC Hydro will strive to design the SAP implementation in a manner that maintains flexibility, in particular the ability to change the system in the future to adapt as the BC Hydro business environment evolves.
- BC Hydro project team and Steering Committee members will, at all times, manage or oversee the Project based on a "One Hydro" basis, meaning the overall interests of BC Hydro will prevail in any case where individual Business Group interests may differ.
- The Project will support BC Hydro's objective of improving the overall entity-wide consistent and transparent financial information ("One truth" principle). This includes standardized reporting applied and understood across all business groups to improve decision making and cost accountability. It is understood that multiple views of the data will be required to support various financial, managerial and regulatory requirements, and that the system must enable and support these needs in a consistent and transparent manner.

2.3. Measures of Success

2.3.1. Project Success Measures

The success of the project will be assessed based on achieving the following measures:

- Financial transaction processing must support data capture that complies with IFRS requirements for F11 (i.e. by April 1, 2010), and must support external financial reporting under Canadian GAAP during F11, and under IFRS subsequent to F11.
- All financial and in scope business processes must be migrated from PeopleSoft to SAP Financials, or related SAP systems.
- Communication and change management is completed and analysis indicates a high level of business readiness prior to F11. All end-users are trained and ready to use the new processes and systems effective for F11.
- All required system interfaces, or interim workarounds as approved by the Steering Committee, must be implemented to support sharing of data between systems effective for F11.

- Post Implementation transition and post-implementation sustainment strategies are approved by the Steering Committee, Project Executive Sponsor and key stakeholders, and implemented in time for F11.

2.3.2. Business Success Measures

The Business Success Measures will be documented in deliverable "2.1.5 Benefits Realization Plan" once the final version of the Business Case has been completed. The following preliminary measures will be updated at that time:

- Post-implementation analysis indicates that end-users have a high level of understanding and acceptance of the new financial systems and processes. It is anticipated that post implementation analysis will occur a minimum of six months after go-live.
- Post-implementation analysis indicates that new business processes implemented under the Project are operating effectively, and provide a high likelihood of achieving the business benefits indicated in the business case.

3. HIGH-LEVEL SCOPE

In general, the overall scope boundaries for the project have been defined based on the basic requirement of replacing the existing PeopleSoft financials footprint with SAP financials. This implies that where current interfaces exist between PeopleSoft and other legacy systems, these will be used to outline the project scope. For example, the Accounts Payable process is in scope, and the input to the process will be defined by the existing handoff and interface from the P2P process in Passport to PeopleSoft.

The following section outlines the overall scope boundaries for the project as decided upon during the initial Blueprint phase of the project completed in Q3 2008. Any changes in scope that violate these boundaries must be approved by the Steering Committee. The detailed project scope will initially be documented in deliverable "1.1.5 Preliminary Scope Statement" and will be maintained by the Project Manager via the scope control process.

3.1. Process Scope

The following processes are in scope to be redesigned by the project. The detailed descriptions of the process boundaries are included in deliverable "1.5.1 Process and Scenario Inventory".

- Pay suppliers of goods and services
- Administer employee expenses
- Distribute the cost of work
- Report the cost of work
- Invoice non-electric account customers and collect payment
- The project costing portion of the "Execute projects and programmes" process
- Account for assets
- The portion of the "Provide financial controls" process that includes maintaining the chart of accounts and setting depreciation policies, interest during construction policies, and overhead policies
- The portion of the "Plan (budget) finances" process that involves reflecting approved budgets in SAP (but does not include the process for establishing or approving the budget)
- Provide G/L and financial reporting
- Close period and monitor financial performance

There are also various process components in scope where the processes interact with the financial system. The processes will not be redesigned as part of this project except in terms of how they impact financial and costing entries in SAP. These include:

- Within the "Serve the Customer" process group: bill the customer, collect revenue, and manage customer credit
- Within the "Procure Goods and Services" process group, manage goods and service contracts
- Within the "Manage Human Resources" process group: manage benefits and concessions and manage payroll

As per the decisions made during the initial Blueprint Phase of the project, the following processes are no longer in scope:

- Time entry
- Treasury

3.2. Organizational Scope

All business units and organizational areas are in scope where they are impacted by or interact with these processes, or where they use the existing PeopleSoft financial system. Any recommendations from the project that organizational changes be made to support the new processes must be approved by the Steering Committee.

3.3. SAP Functional Scope

The project scope includes the implementation of the SAP components required to replace the functions currently performed in the PeopleSoft financials system. Based upon the work performed during the initial Blueprint phase, the SAP components in scope are:

- Finance (FI) including: General Ledger (FI-GL), Consolidations (FI-CCS), Accounts Payable (AP), and Accounts Receivable (AR)
- Controlling (CO) including: Cost Centre Accounting (CCA), Overhead Cost Controlling, Profit Center Accounting (PCA), and Internal Orders
- Fixed Asset Accounting (FA, sometimes referred to as AA)
- Project Systems (PS) as required to support project costing
- Travel Management (TV). This functionality will utilize the Employee Self Serve (ESS) and Manager Self Serve (MSS) components of SAP
- Sales and Distribution (SD) as required to support the Sundry billing and accounts receivable functions
- Human Resources (HR) as required to support the Travel Management functions and enable workflow
- Business Intelligence (BI, sometimes referred to as BW)

3.4. Interface Scope

The current PeopleSoft environment is integrated with numerous other systems, and the SAP Financials implementation will need to support all of these current interface points. The list of in scope interfaces identified during the initial Blueprint phase is in deliverable "1.7.1 RICEFW Inventory".

It is not in scope to redesign or change the legacy systems to which SAP will connect. It is assumed that the SAP interfaces will utilize the data as it is currently provided by these systems and in turn will provide data in an equivalent format to these systems. This represents a considerable risk to the project as the current data structures may not fully support the new processes designed as part of the project. This risk will be managed via the project Risk Management process.

3.5. Data Conversion Scope

The list of master and transactional data conversions in scope for the project is included in the deliverable "Final – Data Conversion Strategy.doc" developed during the initial Blueprint phase of the project.

It is not in scope to convert any historical data into the SAP ECC6 system.

It is also not is scope to manually cleanse or "clean-up" any data prior its conversion into SAP ECC6, this is the responsibility of the business. This represents a risk to the project, and so the project will establish management procedures to coordinate and track data clean-up activities.

3.6. Reporting Scope

The reporting scope of the project includes delivering all external financial and IFRS reporting, Regulatory Reporting, and internal Management Reporting using SAP Business Intelligence (BI).

It is not in scope to migrate any enterprise data warehouse reporting other than what is currently delivered via the PeopleSoft EPM module to SAP BI, or to consolidate any of this data into SAP BI. For example, P2P reporting currently delivered via the COGNOS enterprise data warehouse will not be brought into SAP BI as part of this project.

3.7. Miscellaneous Scope

It is in scope to implement:

- A Segregation of Duties Control Tool, i.e. VIRSA Calibrator for SAP,
- Linking of documents to SAP data objects using FileNet as the document management tool,

- Single sign-on to all SAP components via the SAP Enterprise Portal.

It is not in scope to:

- Decommission the existing PeopleSoft Financial System. That will be completed by a later separate project,
- Implement SAP's Content Management solution (i.e. "Trex")

4. CONSTRAINTS AND DEPENDENCIES

This section outlines the key external constraints and dependencies that may impact this project and its ability to be completed successfully. Each item represents a risk to the project, and will be tracked and managed through the project Risk Management Plan.

4.1. Constraints

1. Due to the externally mandated IFRS reporting requirements and their timing, the project must go-live on or before April 1, 2010.
2. Because the scope of the project does not include making changes to the existing legacy systems that will interface to SAP (most notably PassPort), it is quite likely the solution design will be constrained by the current legacy system designs. As specific items are identified where this is the case, they will be managed as issues and escalated to the Steering Committee.
3. The Project Management practices for the project will need to align with the IT Development Standard Process (IT DSP).
4. The Change Management practices for the project will need to align with the standard Enterprise-wide Change Management Network practices.

4.2. Project Dependencies / Related Initiatives

4.2.1. Financial Simplification Initiative phase 3 (FSI3).

The business requirements defined through FSI3 will be taken as an input to this project. To that end, the handoff procedure for the requirements will be documented in deliverable 2.1.1 “IFRS / FSI Requirements Acceptance”. The FSR Project team is responsible for developing the best overall solution based on these and other requirements and based on the capabilities of the SAP solution.

The key risks to this project are that the FSI3 requirements are not:

- Clear or complete;
- Delivered on time to meet the project timeline;
- Consistent with SAP’s capabilities or best practices

4.2.2. International Financial Reporting Standards (IFRS)

The business requirements defined through the IFRS project will be taken as an input to this project. To that end, the handoff procedure for the requirements will be documented in deliverable 2.1.1 “IFRS / FSI

Requirements Acceptance". The FSR Project team is responsible for developing the best overall solution based on these and other requirements and based on the capabilities of the SAP solution.

The key risks to this project are that the IFRS requirements are not:

- Clear or complete;
- Delivered on time to meet the project timeline;
- Consistent with SAP's capabilities or best practices;

Interdependencies between the FSI and IFRS projects and the implementation of SAP Financials will be controlled through a high level of overlap in Steering Committee composition, and in the Project Team.

4.2.3. Other Related Initiatives

In addition to FSI and IFRS, there are numerous other projects underway or pending in BC Hydro that may impact the Financial Systems Replacement Project. These are listed in the table below:

Initiative	Relationship
Smart Metering Initiative (SMI)	BC Hydro's SMI program will impact and enhance the BC Hydro's existing SAP system. These changes need to be closely coordinated with this project.
Enterprise Service Bus (ESB) Program	The OCIO has a program underway to select, deploy, and operate a standard set of system integration tools. Ideally, interfaces developed for this project will utilize this new technology and will be developed through a new organizational group.
Customer Care Initiatives and Sustainment	As the Financial Systems Replacement project proceeds, there may be changes required to the base Customer Care configuration, and these need to be coordinated to not disrupt existing processes.
Project and Portfolio Management (PPM)	BC Hydro's project management processes and systems are currently tightly integrated with PeopleSoft Financials. The PPM project is expected to recommend and implement new project management systems, which will then need to be integrated with SAP and/or PeopleSoft, depending on the timing of PPM delivery.

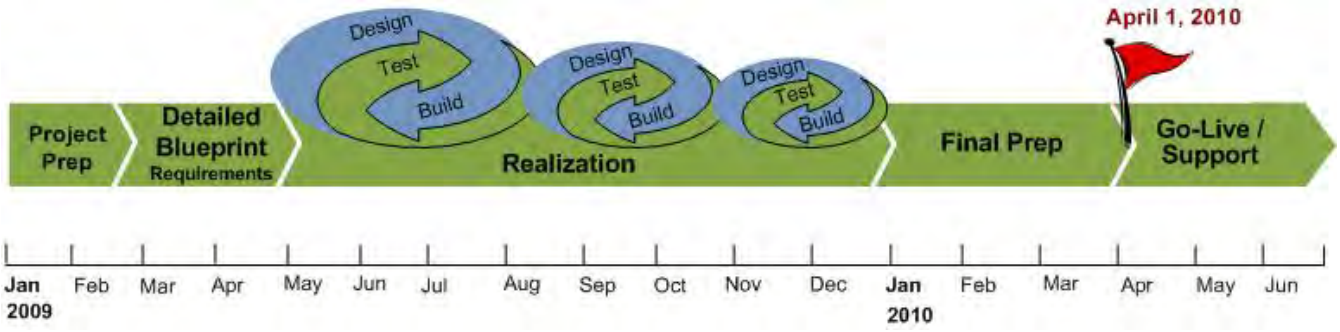
Initiative	Relationship
Procure to Pay (P2P)	The new P2P process is scheduled to go-live in April 2009, and therefore should have limited impact on this project.
SAP Other - TBD	SAP provides functionality in many business process areas, so other significant initiatives may be initiated over the course of this project. Any project that involves SAP design or implementation activities that will be done in parallel with the FSRP represent a potential risk to this project.
BCTC Financial System Upgrade	BCTC is also updating their financial system to meet the IFRS requirements, and are possibly to Oracle version 12. The interface to BCTC's financial system will need to accommodate these changes.

5. PROJECT APPROACH

5.1. Overall Approach

The project will generally follow SAP's ASAP methodology for the implementation phase of the project. The ASAP methodology will be supplemented with specific best practices based on the external consultants experience and adjusted where necessary to fit within the existing OCIO and corporate Change Management standards.

The project will be executed following the standard five ASAP phases as per the following diagram. The diagram also shows approximately how the standard IT DSP gates will map to the project phase.



Gates **G4** **G5** **G6-9a** **G6-9b** **G6-9c** **G9** **G11** **G12**

5.2. High Level Schedule

The targeted project milestones are as follows:

Phase	Milestone Start	Milestone End
1. Project Preparation	January 1, 2009	February 28, 2009
2. Detailed Blueprint	February 2, 2009	April 30, 2009
3. Realization	May 1, 2009	December 31, 2009
4. Final Preparation	January 1, 2010	March 31, 2010
5. Go Live and Support	April 1, 2010	June 30, 2010

5.3. Deliverable Groups by Phase

The major groups of deliverables that will be produced in each phase are outlined in the following table. The specific deliverables that will be produced within each group is detailed in the project work breakdown structure (WBS) and will be refined prior to the execution of each phase.

Project Phase	Deliverable Groups
1. Project Preparation Phase	• Updated Project Charter • Project Plans • Assembled project team • Prepare project facilities • Hold project kick-off • Provide core team training

Project Phase	Deliverable Groups
2. Detailed Blueprint Phase	• "As-is" process documentation • Key Decisions • "Level 2" process designs • Master data / organizational design • Conceptual cost flow design • Reporting Requirements • Functional specifications for development • Technical plans • Change Management and training plans • Realization Phase detailed plans • Finalized Business Case
3. Realization Phase	• Baseline SAP configuration • "Level 3" process designs • Final configuration and unit testing • Technical developments • End user documentation (Level 4 processes) • Training materials • Authorizations development • Gap analysis & business transition plans • Cutover planning • Final prep detailed plans
4. Final Preparation	• Regression testing of existing systems • System performance testing • User acceptance • Training delivery • Execution of transition plans • Cutover preparation and test execution • Cutover execution • Detailed Go-live and Support planning
5. Go-live and Support	• Initial production support • Completion of transition plans • Transition to sustainment • Project closure

6. PROJECT ORGANIZATION AND GOVERNANCE

The following section outlines the project structure, roles and responsibilities with regard to how the project will be governed and how key decisions will be made and approved. As outlined in the figure in section 6.2, the Project Organization has five overall bodies: Sponsorship and Steering Committee, Project Management Team, Core Project Team, Subject Matter Experts, and Business Advisory Team. The general role of each with regard to governance and decision making is outlined in the following table, and the description of individual roles and responsibilities is outlined in section 6.1.

Project Body	Governance / Decision Making Role
Sponsorship and Steering Committee	• Provides the mandate to the Project Management Team to deliver the project per the items defined in this charter • Ensures the appropriate Project Governance procedures and practices are in place and are followed through-out the project • Receives periodic updates from the Project Manager on the progress and status of the project • Receives periodic updates from the Quality Assurance Lead as to the effectiveness of project management, governance, and quality assurance activities • Makes changes as necessary to the project governance structure to best ensure the successful outcome of the project • Supports the effective execution of the project by empowering the Core Project Team to make design decisions • Review "key" decisions, and approve design decisions involving organizational changes, submitted by the Core Project Team • Makes design decisions where the Core Project Team is unable to do so or where the feedback from the Business Advisory Team is in conflict with decisions made by the Core Project Team. • The Steering Committee will meet at a minimum monthly, and more frequently at the request of the Project Manager or the Steering Committee • The Steering Committee will determine the need and timing of any necessary internal or external authorizations (for example, from the ET, the BC Hydro Board of Directors, or the BC Utilities Commission). The Project Manager will coordinate the delivery of any information required by the Steering Committee to fulfill this responsibility. The Project Team will proceed on the assumption that any necessary approvals / authorizations are in place unless otherwise advised by the Steering Committee.
Project Management Team	• Receives the mandate from the Project Sponsor and Steering Committee to deliver the project per the items defined in this charter • Is empowered to develop and execute the required project management plans. Detailed Project Management Plans are available for review by the Steering Committee upon request. • Provides work assignments to the Core Project Team, and monitors

Project Body	Governance / Decision Making Role
	the progress of these assignments • Provides periodic updates to the Steering Committee
Core Project Team	• Is empowered to make design decisions necessary to develop and implement the most appropriate solution per the objectives, scope, and guidelines defined in this charter. "Key" design decisions will be reported to the Steering Committee for review. Design decisions involving organizational changes will be submitted to the Steering Committee for approval. • Wherever possible, the Core Project Team members will be assigned full-time to the project. Where members are not full time, this will be managed as a project risk.
Subject Matter Experts	• The Subject Matter Experts (SME's) provide input and take part in design discussions and decisions, but do not have a specific role to play in the governance of the project.
Business Advisory Team	• The Business Advisory Team represents the end users of the solution and are used to help assess the impact the solution will have on the business. • The Business Advisory team does not have any decision making authority on the project • Feedback on the design and the solution will be gathered from the Business Advisory Team through workshops facilitated by the Core Project Team. The output from these workshops will be reviewed with the Steering Committee. Items where the feedback from the Business Advisory Team is in conflict with the design decisions made by the Core Project Team will be submitted to the Steering Committee for decision.

6.1. Team Organization & Responsibilities

The roles and responsibilities for the Project are summarized in the following table:

Project Body	Roles	Responsibilities
Sponsorship and Steering Committee	**Project Executive Sponsor**	• Appoints the Steering Committee • Obtains / ensures ongoing organizational commitment, including Business Groups, Subsidiaries, the Executive Team and the Board of Directors • Ensures strategic alignment, establishes the priority for this Project relative to other strategic priorities and ensures appropriate resource deployment. • Provides Steering Committee with timely access to the Executive Team, as necessary, to obtain consents or resolve issues. • Receives regular updates, as appropriate, from the Project Sponsor • Supports change management and communications.

Project Body	Roles	Responsibilities
		• Is a visible and vocal advocate for the project and implementation.
Sponsorship and Steering Committee	**Project Sponsor**	• Chairs Steering Committee meetings • Provide final and binding decision making authority where the Steering Committee is unable to reach consensus • Provides periodic updates to the Executive Sponsor
	Steering Committee Members	• Responsible for overall governance of the Project. Steering Committee members will provide advice to the project on behalf of their Business Group but, at all times, will guide the Project on a basis that will provide the best outcome for BC Hydro as a whole. • Provides input into, and approves, the Project Charter • Appoints the Project Manager, and ensure appropriate project controls are in place. The Project Manager will report to the Steering Committee. • Appoints the Quality Assurance Lead and ensures appropriate quality assurance plans and mechanisms are in place. • Appoints the Finance Business Lead. The Finance Business Lead will provide input to the Project Manager, and report to the Steering Committee. • Has sufficient understanding of the Project plan to ensure the overall Project Charter objectives and principles will be satisfied. • Attends all Steering Committee meetings and receive and approve regular reports regarding project progress, completion of key project milestones, schedule, budget, and risks. • Ensures appropriately qualified BC Hydro business and IT personnel are available to the Project, when required • Reviews and, if appropriate, approves requested scope changes • Reviews and approves project costs, and ensure business case and adequate corporate funding is in place. • Approves significant changes to project budget and timeline. • For greater clarity in regards to the use of SAP specifically, the Steering Committee will accept The Core Project Team's decisions regarding SAP configuration and associated business process implications, providing these are consistent with the objectives and principles in this Charter such as using and configuring SAP in a standard manner. In cases where customizations or non standard processes are recommended or necessary, then these items will be escalated to the Steering Committee for consideration. • Will review all key decisions made by the Core Project

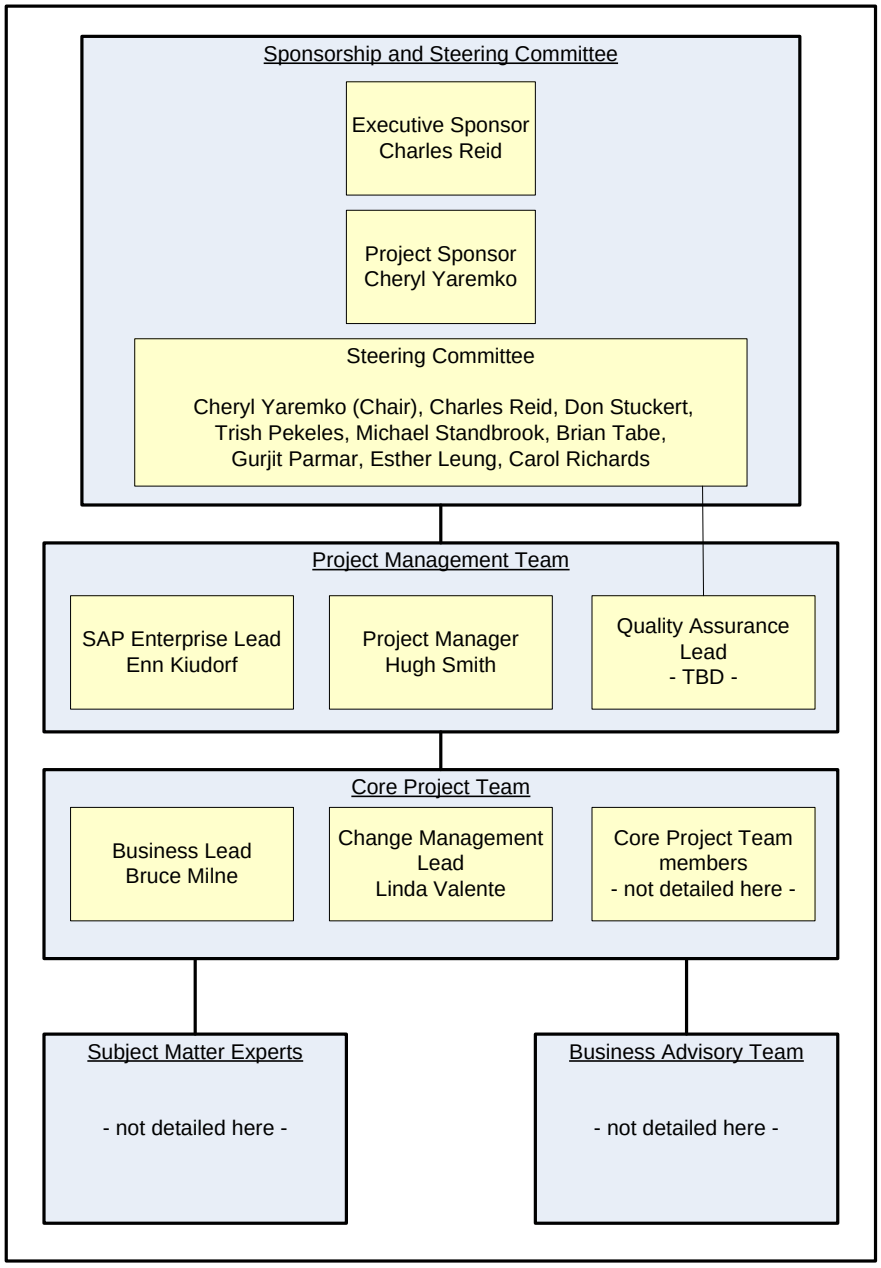
Project Body	Roles	Responsibilities
		Team • Will review and approve all design decisions involving changes to the current organization structure • Will provide decisions where the feedback from the Business Advisory Team is in conflict with the design decisions made by the Core Project Team • Supports change management and communications. • Are visible and vocal advocates for the project and its implementation.
Project Management Team	**Project Manager**	• Will be required to commit 100% (of full-time hours) to the Project, and be accessible to the Project Team during all business hours, and otherwise within 24 hours. [Reasonable allowance to be made for pre-scheduled time off as approved by the Steering Committee] • Accountable for acceptable completion of the Project plan tasks on time, in scope and on budget. • Responsible for ensuring coordination and integration of project deliverables and timelines with related initiatives identified in the Project Charter or, otherwise, as identified by the Steering Committee • Responsible for developing all project plans and managing the overall Project delivery, and achievement of targeted Project performance metrics. • Responsible for escalation and coordination of issues to ensure timely resolution. • Maintains issues log, reports on project risks, and ensures mitigation plans are developed and implemented on a timely basis. • Works closely with the SAP Enterprise Lead to ensure the Project approach and methodology aligns with BC Hydro standards and is reusable on other later SAP implementation projects • Works closely with the Quality Assurance Lead to ensure the Project Quality Management Plan aligns with BC Hydro standards and is integrated with the overall project delivery • Supports change management and communications.
Project Management Team	**SAP Enterprise Lead**	• Owns BC Hydro accountability for acceptable completion of the Project plan tasks on time, in scope and on budget. • Supports and enables the Project Manager in delivery of the PM responsibilities as defined above. • Works with the Project Manager to ensure project management plans align with BC Hydro standards, and that methodology components are reusable on future SAP projects. • Approves and ensures delivery of target SAP implementation architecture and alignment with BC

Project Body	Roles	Responsibilities
		Hydro IT&T Strategy. i.e. accountable for overall evolution of SAP landscape at BC Hydro including changes introduced by FSR Project. • Responsible for delivery of SAP sustainment strategy to enable successful production turnover and ongoing support for the Financials processes. • Ensure alignment of the FSR Project with other Enterprise SAP program initiatives. • Resolve and/or mitigate issues which may potentially arise from scoping, timing, resourcing conflicts related to other SAP initiatives. • Responsible for overall procurement and management of SAP project resources and associated financial commitments. Supports change management and communications.
Project Management Team	**Quality Assurance Lead**	• Responsible for developing the project Quality Management Plan and manages its execution • Coordinates any external resources defined in the Quality Management Plan. This may include KPMG in its role of auditor and IFRS advisor, SAP Canada, or other specialists • Works with the Project Manager to ensure the overall project methodology contains appropriate quality assurance deliverables and activities • Reports periodically to the Steering Committee on the execution of the project against the Quality Management Plan • Makes recommendations to the Steering Committee with regard to changes to the project governance structure
Core Project Team	**Finance Business Lead**	• Provides oversight to ensure that business process and system design meets operational requirements, and consistent with Project objectives and principles • Receives and provides input to related projects (FSI 3, IFRS, and P2P) to ensure consistency / alignment of process designs • Approves process designs. • Provides or identifies subject matter expertise as required. • Supports change management and communications. • Determines which design decisions are to be categorized and managed as “key” design decisions
Core Project Team	**Core Project Team**	• The Project Core Team is the primary working group and is comprised of individuals assigned either full time or near full time to the project. • The team is empowered to develop and implement the best solution design based upon the scope, objectives and guidelines in this charter, and taking into account the input from the business and the capabilities of SAP

Project Body	Roles	Responsibilities
		• The team has responsibility for day to day delivery and outcomes of the project.
Subject Matter Experts	**Subject Matter Experts**	• Provide information and requirements on behalf of the business, and work with the core design teams to assess solution alternatives and develop future state designs. During the Blueprint Phase of the project, SME's are expected to provide details and to help clarify the current business processes, including: applicable business rules, current applications, and governing policies and standards. It is also expected that SME's will likely have to consult with others in their business areas in collecting details and clarifying requirements. The SMEs' primary interaction with the core project team will be through design workshops which will be organized and facilitated by the core team members. • In the Realization Phase of the project, as the "to be" designs are completed, the SME's will be involved in assessing how the new processes will impact the business and will assist in developing change management strategies for successfully implementing the solution. SME's may also be used in the delivery of some project communications. • Later in the Realization Phase, the SME's will also become involved with testing the solution and may be involved in reviewing training material and end user documentation for completeness and accuracy.
Subject Matter Experts	**Other External Advisors**	• BC Hydro may retain additional external advisors and subject matter experts to ensure the project has the comprehensive expertise needed to deliver high quality and authoritative project outcomes. • These external advisors will be managed by and report to BC Hydro via the Project Manager. • It is the intent of BC Hydro to include such advisors within the overall project team to foster open and informed discussions amongst team members, with a view to optimizing the target system design consistent with the objectives and principles established in this Charter. • These advisors may attend workshops, produce deliverables, participate in team meetings, etc as directed by the project manager.
Subject Matter Experts	**Auditor (KPMG)**	• To assist BC Hydro management and supporting financial statement audit requirements in a timely manner, KPMG will perform one or more assessments of the SAP implementation project, focusing on Business Process & Application controls and IT General Controls & Data Integrity. • KPMG will provide feedback to BC Hydro, the SAP project team and the financial statement audit team with

Project Body	Roles	Responsibilities
		regards to risks and controls. This will allow BC Hydro, the SAP project team, and KPMG's financial statement audit to identify and address significant issues while mitigating the impact to the SAP project timeline. • KPMG's work will be Advisory in nature; KPMG will not make any design related decisions.

6.2. Team Structure



7. PROJECT MANAGEMENT

The Project Manager is accountable for the development, execution, and monitoring of the project management plans in keeping with the governance structure outlined in this charter. The following required elements will be included within the appropriate management plan.

7.1. Progress Reporting

- The project will report progress via periodic status reports, which will be prepared to coincide with the Steering Committee meeting schedule (e.g. bi-weekly or monthly depending on the stage of the project).

7.2. Scope Control

- Project scope will be controlled via the project manager through an escalation process to the Steering Committee.
- Proposals to amend the project scope will be documented by the project manager and tabled for review and approval by the Steering Committee.

7.3. Issue Management

- The project manager will arrange for a formal issue log of project issues to be maintained.
- High priority open issues will also be reflected on current status reports to ensure visibility to the Steering Committee and Project Coordination Committee

7.4. Risk Management

- The project manager will arrange for a formal project risk register to be developed and maintained.
- This will be done in coordination with BC Hydro's risk management group to ensure a consistent and rigorous approach to risk
- Key risks (high impact and/or high probability) will also be reflected on current status reports to ensure visibility to the Steering Committee and Project Coordination Committee.

7.5. Quality Assurance

- The Quality Assurance Lead is responsible for the development, execution, and monitoring of the Quality Assurance Plan.
- The Quality Assurance Lead will provide periodic updates to the Steering Committee, as outlined in the QA Plan.
- The OCIO IT QA role will interface to the project through this role and will have the ability to escalate issues independently to the steering committee, if needed.

7.6. Project Management Information System (PMIS)

- The project will use a combination of tools for the PMIS, including:
    - MS Excel for cost and resource planning and tracking (costs will be captured in PeopleSoft financials project costing module)
    - MS Project for schedule management
    - MS Word documents for status reporting
    - SharePoint for the Project Register and for issue management

8. BUDGET

A budget of $5.4 million ($1.2 M OMA, and $4.2 M Capital) has been approved via the current business case for the completion of the Business Blueprint Phase of the project. A refined and final business case will be submitted for approval at that time.

The Project Budget will be managed via the Project Cost Plan and reported to the Steering Committee via the regular status reporting procedure.

9. BENEFITS REALIZATION

This section will be populated after Blueprint is complete and the implementation benefits are clarified as per the full business case. The Benefits Realization Plan will be documented in deliverable 2.1.5 Benefits Realization Plan.

9.1. Benefits Identified

9.2. Incremental Costs Identified (Annual)

9.3. Benefits Realization Management

10. REFERENCES

Item	WBS	Document
1	1.1.1	FSRP Business Case February102009 Blueprint Ph2 bmm - ek (final).doc
2	0.1.1	Final - Business Process Blueprint and Application Blueprint.doc
3	0.1.1	Final - Data Conversion Strategy.doc
4	0.1.1	Final - Integration Conceptual Design.doc
5	0.1.1	Final - Reporting Strategy.doc
6	0.1.1	Final - Technology Blueprint and Overall Technical Landscape.doc

Financial Systems Replacement Project										
6.2.1 Project Change Control Log									Totals:	$2,546,791.00
Item	Description	Link	Date Submitted	Raised By	Assigned To	Issue Ref	Status	Priority	Comments	Estimated Cost
CR 1	SAP New GL Assessment			Enn Kiudorf			Closed - approved		From discovery blueprint phase	$15,000.00
CR 2	Additional Accenture resources for discovery blueprint			Enn Kiudorf			Closed - approved		From discovery blueprint phase	$20,000.00
CR 3	Provide SBX and Basis support for PPM	CR 3	12-Mar-09	Bryan Baker	Kai Hui		Closed - approved	Medium		$0.00
CR 4	Powerex fixed assets in SAP	CR 4	12-Mar-09	Henry Sue	Nelson Lai		Closed - approved	Medium		$0.00
CR 5	Adoption of BCUC USoA per commission order	CR 5	27-Apr-09	Bruce Milne	Hugh Smith		Closed - approved	High	June 29 - sent to Cheryl for signature. Signed by Charles July 3.	$338,475.00
CR 6	Impact of merging FSRP with PPM project	CR 6	15-May-09	Hugh Smith	Hugh Smith	26	Closed - approved	High	Signed by Charles at July 9th SC.	
CR 7	Add Travel pre-approval to scope	CR 7	26-May-09	Maria Tannenbaum	Bruce Milne	15	Closed - approved	Low	Ready for SC approval June 25, 2009. Declined by SC. Per note from Cheryl, to be taken back to SC for re-approval July 9, 2009. Third try for SC, July 28th. Approved by SC, but Charles not present. Agreed to by Charles per email from Cheryl. Waiting signed document.	$15,000.00
CR 8	Bill on estimate process controls change		05-Jul-09	Michael Wynne	Michael Wynne	19	Cancelled	Medium	Reviewed issue at July 9th Steering Committee and it was decided the business unit will deal with the concern, hence no project scope change required.	$0.00
CR 9	SAP Resourcing to support SLO conversion	CR 9	11-Aug-09	Hugh Smith	Enn Kiudorf	57	Closed - approved	High	Work proceeding. Still negotiating price with SAP.	$300,000.00
CR 10	Harmonization of GST and PST (HST)		11-Aug-09	Hugh Smith	Hugh Smith	56	Hold	Medium	Discussed at Aug 20th Steering Committee and FSR will not be responsible for HST. May provide support later if requested by the sustainment organization and will assess impact at that time.	$0.00
CR 11	PassPort Data Conversion	CR 11	01-Oct-09	Hugh Smith	Hugh Smith		Closed - approved	High	For SC and Charles' signature Dec 3, 2009. Estimate from Andrew Gimple (see email) $150 K capital and $510 K OMA (we had $210 capital in 2.4.3 Legacy App Dev to help cover).	$450,000.00
CR 12	Additional P2P reporting requirements		09-Nov-09	Hugh Smith	Nada Kovacevic	79	Cancelled	Medium	Included in scope of PassPort changes (CR 11).	
CR 13	Additional project resources due to schedule delays	CR 13	09-Nov-09	Hugh Smith	Hugh Smith		Closed - approved	High		$350,000.00
CR 14	ABSU resources for New GL migration	CR 14	10-Nov-09	Hugh Smith	Hugh Smith		Closed - approved	High	Original budget for ABSU New GL migration was $225 K. Work completed on phase one spent $176 K, and estimate to complete the work is an additional $414 K. If accurate, that requires an additional $365 K. Dec 3 - decision confirmed not to proceed with New GL migration, just SLO work. Reduces cost by $80 k to $285 K.	$285,000.00
CR 15	Reduction in SAP QA work	CR 15	07-Dec-09	Hugh Smith	Hugh Smith		for signature	Medium		-$242,649.00
CR 16	Projected ABSU New GL migration overage	CR 16	16-Dec-09	Hugh Smith	Hugh Smith		for signature	Medium	From ABSU status report. Projecting over budget by $67 K.	$148,678.00
CR 17	Potential full cost of SAP SLO work	CR 17	16-Dec-09	Hugh Smith	Enn Kiudorf		for signature	Medium	Final cost still being negotiated. Full cost quoted at $480 K ($300 K change ordered per CR 9)	$200,000.00
CR 18	Additional cost of ABSU regression testing	CR 18	23-Dec-09	Hugh Smith	Hugh Smith		for signature	Medium	Budget was $180,000 and SoW estimated at $360,000.	$180,000.00
CR 19	Additional ABSU cost for Change Mgmt and Training	CR 19	23-Feb-10	Hugh Smith	Hugh Smith		for signature	Medium	Original budget was $90,000. SoW is for $445,000.	$355,000.00
CR 20	SAP QA reduction 2		23-Feb-10	Hugh Smith	Hugh Smith		Cancelled	Low	Full cost of QA reduction included in CR 15. Not required.	
CR 22	ABSU CCS regression testing changes for variants and cutover support	CR 22	19-Mar-10	Hugh Smith	Hugh Smith		for signature	Medium		$103,500.00
CR 25	ABSU cost for PAHR regression test	CR 25	26-Feb-10	Hugh Smith	Hugh Smith		for signature	Medium		$28,787.00

Scope Change Request Form

Submitted by:	Hugh Smith	Date:	Mar 12, 2009	CR. #:	CR 3
Requested by:	Bryan Baker	WBS:	2.6.5	Priority:	Medium

Description of Proposed Change

The PPM project has requested that we provide access to our sandbox (SBX) environment for their project team to use, and that we provide Basis support for them as well. PPM has agreed to pay for the support time.

Benefits/Reason for Change

Implications of Postponing / Not making the change

Approvals for Investigation

Project Manager: Hugh Smith	Date: Mar 19, 2009
Comments: Discussed requirement with Bryan, and it does make sense that both teams are working in the same Sandbox environment. Kai to look into details for time commitment and charging of time to PPM project.	

Investigated

Assigned to: Kai Hui	Date: April 28
Comments: ABSU will provide BASIS support to the PPM project directly with a contracted resource and will not impact FSR project.	

Impact Analysis

On: budget, resources, project days, other modules, etc.	
Comments:	
Disposition: ☐ Closed ☐ Escalated ☐ Deferred ☐ Rejected	Date:

Approval for Implementation

Management:	Date:	
Comments / Steering Committee reference:		

Scope Change Request Form

Submitted by:	Hugh Smith	Date:	Mar 12, 2009	CR. #:	CR 4
Requested by:	Henry Sue	WBS:	2.4.4	Priority:	Medium

Description of Proposed Change

During the design workshops, it was identified that there is potential value in managing Powerex assets in SAP-FA.

Benefits/Reason for Change

Implications of Postponing / Not making the change

Approvals for Investigation

Project Manager: Hugh Smith	Date: Mar 19, 2009
Comments: Assigned to Nelson to assess value / impact of the change.	

Investigated

Assigned to: Nelson Lai	Date:
Comments:	

Impact Analysis

On: budget, resources, project days, other modules, etc.	
Comments:	
Disposition: ☐ Closed ☐ Escalated ☐ Deferred ☐ Rejected	Date:

Approval for Implementation

Management:	Date:
Comments / Steering Committee reference:	

Scope Change Request Form

Submitted by:	Hugh Smith	Date:	Mar 30, 2009	CR. #:	5
Requested by:	Hugh Smith	WBS:	N/A	Priority:	1

Description of Proposed Change

On March 13, 2009, the BCUC directed BC Hydro to adopt the BCUC's Unified System of Accounts (USoA) for all revenue requirement applications (RRA's) filed after January 1, 2011. See Appendix to this form for the text of the BCUC order.
Adoption of the BCUC USoA is a major change for BC Hydro, and will have a large impact on the design basis used in developing the SAP Finance (FI) and Controlling (CO) solution.

Benefits/Reason for Change

The change is an ordered requirement from the BCUC.

Implications of Postponing / Not making the change

BC Hydro has decided to comply with the commission's order, and hence there is no option to not make the change.

Approvals for Investigation

Project Manager:	Hugh Smith	Date:	April 12, 2009
Comments:			

Investigated

Assigned to:	Hugh Smith	Date:	April 12, 2009
Comments:			

Impact Analysis

On: budget, resources, project days, other modules, etc.					
Comments: Change requires an additional specialized external resource be added to the project to manage the development of the BCUC reporting requirements and integrating them into the SAP design. Hanri Jacobs has been secured to fill this role. Total cost: $338,475.00 capital [F'10 $282,075.00 and F'11 $56,400.00].					
Disposition:	☐ Closed	☐ Escalated	☐ Deferred	☐ Rejected	Date:

Approval for Implementation

Management:	Date:	
Comments / Steering Committee reference:		

1.1. Appendix A: BCUC Decision Order, March 13, 2009

Commission Determination

The Commission Panel notes that BC Hydro is moving to implement the BCUC USoA. The Commission Panel believes that a consistent and standard reporting methodology that does not change from year to year is highly desirable for all stakeholders. The ability to have reported information in a particular year that is comparable without modification to any other year assists in establishing a historical financial record that is transparent, comparable, and consistent. The Commission Panel notes that back-casting information based on a future year format and thus requiring changing prior reported information to make it consistent is both time-consuming and costly.

The Commission Panel further notes that the reporting structure of the BCUC USoA is applicable to both the utility's Annual Report to the Commission and the financial information in revenue requirements applications. The actual financial results in the Annual Reports should provide consistent historical information that is directly relevant and comparable to the financial information presented in revenue requirement applications. An informative Annual Report should provide information that includes explanatory variance analysis, significant changes or events, supporting regulatory schedules, cross-referencing, and reconciliation from the financial statements to the regulatory schedules.

The Commission Panel accepts that BC Hydro is working with Commission staff on developing an informative Annual Report, but is concerned as to the rate of progress.

The Commission Panel directs BC Hydro to adopt the BCUC USoA by no later than the F2012 reporting year. If certain plant accounts already in place cannot be coded to the proper BCUC account, BC Hydro is to make an application for an exemption for these historical amounts. All plant additions commencing as of the date of this Decision should have the ability to be recorded and reported to the appropriate BCUC account codes. BC Hydro may be able to adopt the USoA earlier and it is encouraged to do so. The Commission Panel further directs that if BC Hydro is to re-platform to a replacement financial system this replacement financial system is to fully incorporate the BCUC USoA.

The Commission Panel further directs BC Hydro to submit an Action Plan within three months of the date of this Decision. The Action Plan should provide the timeline and milestones on how BC Hydro plans to implement the USoA and to develop the new Annual Report for the F2012 reporting year. BC Hydro is required to provide annual progress reports until the plan is fully implemented, which include updates on incorporation of any new financial information system BC Hydro may be considering.

For clarity, the Commission Panel directs that BC Hydro revenue requirement applications filed after January 1, 2011 contain financial

information that follows the USoA. The first filed revenue RRA that follows the USoA should also include parallel financial information that transitions from the previous reporting style used in the prior filed RRA.

Scope Change Request Form

Submitted by:	Hugh Smith	Date:	2009-May-15	CR. #:	6
Requested by:	Hugh Smith	WBS:	N/A	Priority:	High

Description of Proposed Change

Both the FSR and PPM (Project and Portfolio Management) projects need to configure and implement the PS module in SAP, and both projects have a planned go-live date of 2010-Apr-01. It is not possible to have two projects designing, configuring, and developing simultaneously in a single SAP instance.
In order for the two projects to successfully go-live 2010-Apr-01, the delivery of the SAP portions of the projects need to be merged into a single project under the current FSRP structure.

Details of the change.

1. The SAP-InfoPM interface would be removed from the FSRP scope as InfoPM would be decommissioned 2010-Apr-01.
2. The addition of a new interface from BCTC to SAP or PrimaVera to replace the current BCTC-InfoPM interface.
3. Configuration and testing of the PS module in SAP-ECC to meet the PPM requirements.
4. Development and testing of any enhancement items to meet the PPM requirements. No items are currently identified, and any that are will need to be approved as separate Change Requests prior to development work starting on them.
5. Development and testing of standard BI reporting from data from core SAP-ECC required to meet the PPM requirements.
6. SAP Basis and technical support for the SAP ecosystem, including RWD/uPerform and adding PrimaVera to technical landscape designs.

The FSR project will NOT be responsible for:

1. The selection, development or testing of the SAP-PrimaVera integration.
2. Any Change Management activities (including the development and delivery of end user training)
3. PPM scope items outside of core SAP and BI (e.g. Sharepoint tools, MWH practices, etc.)
4. The technical infrastructure required to support PrimaVera or any other non-SAP / BI components of the solution

Benefits/Reason for Change

1. Combining the delivery of the two projects is the only opportunity for PPM to go-live prior to October of 2010.
2. Allows PPM to take advantage of the existing FSR project structure, including its project management, technical, and BI teams thus reducing the overall cost of the PPM project.
3. Eliminates the potential need for rework to the FSR design that would likely be required if PPM were to be designed / implemented at a later date.
4. Allows the project management, project costing, and fixed asset accounting processes to be designed as a single continuous process and hence take full advantage of the integrated nature of SAP.

Implications of Postponing / Not making the change

The decision to make the change cannot be postponed as the FSR project has now started configuring and testing in the development system, and introducing the PPM requirements any later than this would introduce too much risk to the FSR project schedule.
If the change is not made, PPM would be unable to go-live until October 2010 at the earliest, and the business would miss the opportunity to take advantage of the synergies noted above.

If the change is not approved, it is important that the PPM project essentially cease its current design activities and establish a new project schedule based on performing design and development tasks at a time when they will not impact FSRP. If the change is not approved and PPM continues with their current plan, the impact to the FSR resources would essentially be the same as if the change had been approved, introducing considerable risk to FSRP without providing a clear mandate to manage the risk.

Approvals for Investigation

Project Manager: Hugh Smith	Date: 2009-May-15
Comments: The FSR project has a "hard" go-live date due to the need to provide IFRS reporting in F'11. PPM does not have a hard go-live date.	

Investigated

Assigned to: Hugh Smith	Date: 2009-Jun-30
Comments: Numerous discussions have been held between the FSR and PPM project management teams as to how to structure the projects to best support the objectives of both. Final approval of the PPM scope and conceptual design expected to be received from the PPM Steering Committee 2009-Jul-07.	

Impact Analysis

On: budget, resources, project days, other modules, etc.
Comments: **Budget:** There is no budget impact to FSRP as a result of this change. The costs for delivery of all PPM requirements are included within the PPM business case and funding. **Schedule:** The overall schedule of the PPM project currently lags that of the FSR project. Also, given that the PPM project scope now includes full integration between SAP and PrimaVera, PPM has an additional set of tasks to select, procure, and implement this integration as part of the final design / build / test exercise. As a result, there is considerable risk that the PPM project will not be ready to go live 2010-Apr-01. **Mitigation:** To mitigate this risk, the project plan will include a decision point in mid-October 2009, to determine whether PPM is on track for the 2010-Apr-01 go-live. If it is determined that it is not, then the FSR project may revert to its original scope and begin development of the SAP-InfoPM interface and PPM would be rolled out at a later date. An update on the PPM status will be added as a standing agenda item to the FRSP Steering Committee as it may be clear that PPM will not be ready for 2010-Apr-01 earlier than mid-October. **Resources:** While the majority of resources required to deliver the PPM scope items will be net new additions to the project, funded through the PPM business case, this change will also impact existing key FSR Project resources – Hugh Smith (Project Manager), Tanya Peachey (Solution Architect and BI Team Lead), Thomas Rautenbach (Technical Architect and Team Lead) and Nada Kovacevic (Integration Team Lead). Each of these resources are currently working at roughly 120% of normal working hours and have limited capacity to absorb additional work load. It is estimated that this change will add approximately 10% to the work effort of each of these individuals assuming the PPM scope remains firm and no major unresolved design issues arise. **Mitigation:** The FSR Project is currently adding resources to meet its full delivery scope, and it is believed this will allow us to shift enough of the work load from the noted resources to various of the additional resources. This will be monitored on an ongoing basis, and if the PPM time commitment exceeds what can be managed it will be brought to the Steering Committee as an issue. If it is determined that the impact on the FSR resources is adding an unacceptable level of risk to the project, it may be brought to the Steering Committee to decide to de-couple the project go-live dates prior to the mid-October decision point.

Disposition: ☐ Closed ☐ Escalated ☐ Deferred ☐ Rejected	Date:

Approval for Implementation

Management:	Date:	
Comments / Steering Committee reference: It is recommended that the Steering Committee approve this change. While the change does introduce additional risk to the FSR Project, it is believed that the risk is manageable .		

Attachments:

1. Email from Cheryl Yaremko in lieu of attending 2009-Jul-09 Steering Committee meeting.
2. Overview presentation on PPM project from 2009-Jun-25 Steering Committee.

Scope Change Request Form

Submitted by:	Maria Tannenbaum	Date:	26/05/2009	CR. #:	7
Requested by:	Bruce Milne	WBS:	3.3.1	Priority:	Low

Description of Proposed Change

Add travel pre-approval to in-scope functionality for the SAP Travel Module. SAP enabled functionality would enable on-line pre-trip approval. Travellers requesting trip authorization would fill out an on-line approval request that would be automatically routed via workflow to the appropriate manager. Once expenses are incurred, key fields from the pre-approval form will automatically populate the expense claim. [North American travel requires written pre-approval from the BCH employee/traveller's managers, travel outside North America requires pre-approval from VP, or President, or CEO. All training and conferences require pre-approval no matter where located.]

Benefits/Reason for Change

Currently pre-trip approval is obtained on a manual form that must be filled out by the employee/traveller and approved as per rules above (approval authority policy). Automated approval improves efficiency, and enables system embedded internal control – a guiding principle of the FSRP project. Incremental change management at the time of implementing a new tool is minimal. Pre-trip approvals are currently not systematically tracked, making it difficult to evaluate related policies and procedures for change or improvement. Related workflow capability is enabled as part of existing project scope.

Implications of Postponing / Not making the change

Cost savings for the project but missed opportunity to attain a relatively straight forward internal control improvement. It would be more costly and complex to implement this item later, given that the users will receive travel expense training, it is logical to also train them on the pre-approval functionality at the same time.

Approvals for Investigation

Project Manager:	Hugh Smith	Date:	May 29, 2009
Comments:			

Investigated

Assigned to:	Bruce Milne	Date:	May 29, 2009

- Comments: Concept was discussed with the BAT on May 26th and they unanimously supported the scope change on the basis that it enables Corporate policy to be consistently applied. *"Regarding pre-approval of travel; it does not consistently get done today or recorded. The BAT supports this design going forward as it enables Corporate policy to be consistently applied."*

Impact Analysis

On: budget, resources, project days, other modules, etc.
Comments: This is a minor change from a system set up and configuration perspective as it uses standard SAP functionality. Estimate of 2 weeks for configuration and testing ($10k); estimate of 1 week for modification to e-learning and instructor lead training ($ 5K). No incremental training sessions are required, instead additional content will be added to e-learning and the instructor led module.

Disposition: ☐ Closed ☐ Escalated ☐ Deferred ☐ Rejected	Date:

Approval for Implementation

Management:	Date:	
Comments / Steering Committee reference:		

Scope Change Request Form

Submitted by:	Hugh Smith	Date:	Nov 10, 2009	CR. #:	CR 9
Requested by:	Hugh Smith	WBS:	3.14.9	Priority:	High

Description of Proposed Change

SAP "System Landscape Optimization" (SLO) work to activate parallel currencies and correct the GL structure in the legacy North Start CCS environment.

Benefits/Reason for Change

During the initial testing for the New GL migration it was discovered that during the original North Star CCS implementation of SAP that the use of parallel currencies was not activated as the scope of that project did not include a true SAP-FI implementation. The use of parallel currencies is a requirement for the FSR project, and hence all existing financial documents posted since the initial go live of North Star needs to be converted to include the additional currency entries.

Implications of Postponing / Not making the change

There is no option to not make this change given the project key decision 2.2.1 to have FSR use the same production instance of SAP that is currently used by North Start.

Approvals for Investigation

Project Manager:	Hugh Smith	Date:	Nov 10, 2009
Comments: SAP to perform remote diagnostic to determine scope / effort of change.			

Investigated

Assigned to:	Enn Kiudorf	Date:	Dec 3, 2009
Comments: Work is progressing on this. Negotiations continue with SAP regarding the cost of the exercise.			

Impact Analysis

On: budget, resources, project days, other modules, etc.					
Comments: No schedule impact. Change targeted to be complete in the existing CCS production environment the Dec 12-13 weekend. Budget still being negotiated with SAP and will be in the $250 K to $500 K range (likely outcome is $300 K).					
Disposition: ☐ Closed	☐ Escalated	☐ Deferred	☐ Rejected	Date:	

Approval for Implementation

Management:	Date:	
Comments / Steering Committee reference:		

Scope Change Request Form

Submitted by:	Hugh Smith	Date:	Oct 1, 2009	CR. #:	CR 11
Requested by:	Enn Kiudorf	WBS:	3.12.2	Priority:	High

Description of Proposed Change

To develop data clean-up and conversion routines to bring the PassPort work management and supply chain system into alignment with the new accounting model being introduced by the FSR project.

Benefits/Reason for Change

The original assumption of the FSR project was that the existing data in PassPort would not be converted, rather the data would be translated in the interfaces to SAP to point to the new SAP objects. Once the full extent of the FSR accounting model changes was understood and could be assessed by the PassPort sustainment team, it became apparent that this was not a workable solution. As an example, it would mean that PassPort users would continue to charge purchases to old PeopleSoft "projects" that would not exist in SAP, and in fact may be replaced by various cost objects in SAP (cost centers, internal orders, WBS elements, or network activities).

Implications of Postponing / Not making the change

There is not an option to not proceed with the change.

Approvals for Investigation

Project Manager: Hugh Smith	Date: Oct 1, 2009
Comments: Workshops with Hugh Smith, Enn Kiudorf, Andrew Gimple, Tanya Peachey, Nada Kovacevic, and Paul Ritchey to confirm scope of required changes and develop estimate.	

Investigated

Assigned to: Hugh Smith	Date: Oct 30, 2009
Comments: Scope of work confirmed.	

Impact Analysis

On: budget, resources, project days, other modules, etc.
Comments: Budget: Cost of changes estimated at $150 K capital and $510 K OMA (original budget included $210 K capital to cover part of this work). Net change from the project contingency is $450 K. Workplan has been completed, and all items are scheduled to be complete by Dec 31, 2009, in time to fit in with the third round of integration testing.

Disposition: ☐ Closed ☐ Escalated ☐ Deferred ☐ Rejected	Date:

Approval for Implementation

Management:	Date:	
Comments / Steering Committee reference:		

Scope Change Request Form

Submitted by:	Hugh Smith	Date:	Nov 9, 2009	CR. #:	CR 13
Requested by:	Hugh Smith	WBS:	Various	Priority:	High

Description of Proposed Change

Additional technical resources to compensate for schedule delays with interface development.

Benefits/Reason for Change

In order to compensate for the earlier schedule slippage in developing and testing interfaces, much of the technical team have been working extended hours in November and December, and this will continue into the new year as well. There is also a need to keep several of the technical team members beyond their original roll-off dates.

Implications of Postponing / Not making the change

Not making the change would cause the current schedule slippage to continue and would cause the project to miss the scheduled go live date of April 1, 2010. As a result of missing the April 1 date, the project team would need to be extended to support the project until the next available go live date (assuming May 1, 2010 is achievable, this would cost approximately $1 million based on the current project burn rate).

Approvals for Investigation

Project Manager:	Hugh Smith	Date:	Nov 9, 2009
Comments:			

Investigated

Assigned to:	Hugh Smith	Date:	Nov 9, 2009
Comments: Resource plan updated with new forecast based on current schedule and progress. To ensure technical resourcing is available through to February 2010, and additional $350 K is required from the current project contingency. With this current CR of $350 K, the remaining project contingency will be $660 K. If additional resourcing is required beyond February, a subsequent CR will be filed.			

Impact Analysis

On: budget, resources, project days, other modules, etc.					
Comments: $350 K Capital required from project contingency.					
Disposition: ☐ Closed	☐ Escalated	☐ Deferred	☐ Rejected	Date:	

Approval for Implementation

Management:	Date:	
Comments / Steering Committee reference:		

Scope Change Request Form

Submitted by:	Hugh Smith	Date:	Nov 10, 2009	CR. #:	CR 14
Requested by:	Hugh Smith	WBS:	3.14.9	Priority:	High

Description of Proposed Change

ABSU time to support the SAP "System Landscape Optimization" (SLO) work to activate parallel currencies and correct the GL structure in the legacy North Start CCS environment.

Benefits/Reason for Change

During the initial testing for the New GL migration it was discovered that during the original North Star CCS implementation of SAP that the use of parallel currencies was not activated as the scope of that project did not include a true SAP-FI implementation. The use of parallel currencies is a requirement for the FSR project, and hence all existing financial documents posted since the initial go live of North Star needs to be converted to include the additional currency entries. The core SAP work is covered under CR #9, this change is required for ABSU to provide regression testing of the solution.

Implications of Postponing / Not making the change

There is no option to not make this change given the project key decision 2.2.1 to have FSR use the same production instance of SAP that is currently used by North Start.

Approvals for Investigation

Project Manager: Hugh Smith	Date: Nov 10, 2009
Comments: SAP to perform remote diagnostic to determine scope / effort of change.	

Investigated

Assigned to: Hugh Smith	Date: Dec 3, 2009

Comments: Initially this CR was to cover the ABSU regression testing and implementation for both the SAP SLO work and the New GL conversion. As of the decision on Dec 3, 2009, the New GL conversion work is no longer required which has reduced the cost of the ABSU work somewhat.

Phase 1 Initial investigation and planning:	$185,000.00 (included both SLO and New GL)
Phase 2 Implementation (SLO only):	$325,000.00 (reduced from $413, 500 with New GL)
Sub-total:	$510,000.00
Less original budget:	$225,000.00
Value of this Change Request:	**$285,000.00 Capital**

Impact Analysis

On: budget, resources, project days, other modules, etc.				
Comments: No schedule impact. As above, budget impact is $285,000.00 Capital, $0.00 OMA.				
Disposition: ☐ Closed	☐ Escalated	☐ Deferred	☐ Rejected	Date:

Approval for Implementation

Management:	Date:	
Comments / Steering Committee reference:		

Scope Change Request Form

Submitted by:	Hugh Smith	Date:	Dec 7, 2009	CR. #:	CR 15
Requested by:	Hugh Smith	WBS:	6.5.4	Priority:	Low

Description of Proposed Change

Reduction in the original scope for external QA to be provided by SAP.

Benefits/Reason for Change

SAP was originally engaged to provide project QA services for all phases of the project, although the primary risk area was always considered to be with the quality of the solution design. SAP has completed the first two portions of the QA – blueprint completion and design completion – and while useful, did not identify any major risk items that were not already understood and being managed by the project. The final planned portions of the QA process were to review the system configuration and pre-go live readiness activities. Given the other project QA activities such as IT-DSP and the extensive system test plans, there is considered to be limited value in completing the final portions of the SAP QA.

Implications of Postponing / Not making the change

Approvals for Investigation

Project Manager:	Hugh Smith	Date:	Dec 7, 2009
Comments:			

Investigated

Assigned to:	Hugh Smith	Date:	Dec 7, 2009

Original budget for the work was $400,000.
Based on the actual amount paid for the initial phases of the work ($157,531), the scope reduction would result in a savings of $242,469.
Given the current tight project schedule, performing the SAP QA would likely increase the risk to the project by drawing critical resources away from other key development and testing activities.

Impact Analysis

On: budget, resources, project days, other modules, etc.	
Budget reduction of $242,469	
Disposition: ☐ Closed ☐ Escalated ☐ Deferred ☐ Rejected	Date:

Approval for Implementation

Management:	Date:	
Comments / Steering Committee reference: Discussed and approved by Steering Committee.		

Scope Change Request Form

Submitted by:	Hugh Smith	Date:	Dec 16, 2009	CR. #:	CR 16
Requested by:	Hugh Smith	WBS:	2.4.8	Priority:	Medium

Description of Proposed Change

Overage charged to project by ABSU for work done on the New GL and SAP SLO conversion work.

Benefits/Reason for Change

The original project budget for ABSU to perform this work was $225,000.00. When the scope of work was increased to cover the SAP SLO work (see CR 9 SAP Resourcing to support SLO conversion), the budget was increased by $285,000.00 (see CR 14) bring the total budget to $510,000.00.
The ABSU statement of work for this was time and materials. The actual cost charged to the project for this work was $658,678.00, requiring this additional CR for $148,678.00

Implications of Postponing / Not making the change

Approvals for Investigation

Project Manager:	Hugh Smith	Date:	Dec 16, 2009
Comments:			

Investigated

Assigned to:	Hugh Smith	Date:	Dec 16, 2009
Budget based on ABSU SoW was $510,000.00. Actual cost charged to project was $658,678.00.			

Impact Analysis

On: budget, resources, project days, other modules, etc.					
Budget increase of $148,678.00 capital.					
Disposition: ☐ Closed	☐ Escalated	☐ Deferred	☐ Rejected	Date:	

Approval for Implementation

Management:	Date:	
Comments / Steering Committee reference:		

Scope Change Request Form

Submitted by:	Hugh Smith	Date:	Dec 16, 2009	CR. #:	CR 17
Requested by:	Hugh Smith	WBS:	2.10.4	Priority:	Medium

Description of Proposed Change

Full cost for SAP SLO work to clean-up old CCS GL postings (see CR 9).

Benefits/Reason for Change

There was originally no scope or budget as part of the FSR project to do this work. As per CR 9, SAP's System Landscape Optimization group (SLO) was engaged to perform a clean-up of the existing GL's used by the current NorthStar CCS system. The value of CR 9 was $300,000.00 although SAP had originally bid the work at $500,000.00. It was believed at that time that SAP it would be possible to negotiate with SAP to have them reduce their fee to around the $300,000.00 mark.

Implications of Postponing / Not making the change

Approvals for Investigation

Project Manager: Hugh Smith	Date: Dec 16, 2009
Comments:	

Investigated

Assigned to: Hugh Smith	Date: Dec 16, 2009
Negotiations with SAP have not resulted in any reduction in their original quote. Budget based on CR 9: $300,000.00. Actual cost charged to project: $500,000.00.	

Impact Analysis

On: budget, resources, project days, other modules, etc.	
Budget increase of $200,000.00 capital.	
Disposition: ☐ Closed ☐ Escalated ☐ Deferred ☐ Rejected	Date:

Approval for Implementation

Management:	Date:
Comments / Steering Committee reference:	

Scope Change Request Form

Submitted by:	Hugh Smith	Date:	Dec 23, 2009	CR. #:	CR 18
Requested by:	Hugh Smith	WBS:	2.4.5	Priority:	Medium

Description of Proposed Change

Additional ABSU cost for regression testing of production CCS system based on SoW

Benefits/Reason for Change

Original project budget for this scope of work was 2,000 hours or $180,000.00 Based on the SoW from ABSU for this work, the estimated cost for the work is $360,000.00, requiring a change of $180,000.00.

Implications of Postponing / Not making the change

Approvals for Investigation

Project Manager:	Hugh Smith	Date:	Dec 23, 2009
Comments:			

Investigated

Assigned to:	Hugh Smith	Date:	Dec 23, 2009

Impact Analysis

On: budget, resources, project days, other modules, etc.	
Budget increase of $180,000.00 capital.	
Disposition: ☐ Closed ☐ Escalated ☐ Deferred ☐ Rejected	Date:

Approval for Implementation

Management:	Date:	
Comments / Steering Committee reference:		

Scope Change Request Form

Submitted by:	Hugh Smith	Date:	Feb 23, 2010	CR. #:	CR 19
Requested by:	Hugh Smith	WBS:	2.4.6	Priority:	Medium

Description of Proposed Change

Additional ABSU cost for Change Management and training of AP and other ABSU staff

Benefits/Reason for Change

Original project budget for this scope of work was 1,000 hours (2 months for 3 resources) or $90,000.00. No budget was included for backfilling of resources during training and cutover (same approach taken with other business groups).
The estimated cost for the work based on the SoW and after negotiations with ABSU is $445,000.00, requiring a budget change of $355,000.00.

Implications of Postponing / Not making the change

Approvals for Investigation

Project Manager:	Hugh Smith	Date:	Feb 23, 2010
Comments:			

Investigated

Assigned to:	Hugh Smith	Date:	Feb 23, 2010

Impact Analysis

On: budget, resources, project days, other modules, etc.					
Budget increase of $355,000.00 OMA					
Disposition: ☐ Closed	☐ Escalated	☐ Deferred	☐ Rejected	Date:	

Approval for Implementation

Management:	Date:	
Comments / Steering Committee reference:		

Scope Change Request Form

Submitted by:	Hugh Smith	Date:	Mar 19, 2010	CR. #:	CR 22
Requested by:	Hugh Smith	WBS:	2.4.5	Priority:	Medium

Description of Proposed Change

Additional ABSU cost for changes to the CCS regression test SoW (see CR 18) for: variant updates and cutover activities.

Benefits/Reason for Change

Additional work required by ABSU as part of CCS regression testing to update selection variants and perform cutover activities.

Implications of Postponing / Not making the change

Approvals for Investigation

Project Manager:	Hugh Smith	Date:	Mar 19, 2010
Comments:			

Investigated

Assigned to:	Hugh Smith	Date:	Mar 19, 2010

Budget for this scope of work after CR 18 was $360,000, although this did not include fixes any items discovered during regression testing or other cutover tasks. Work is required.

Impact Analysis

On: budget, resources, project days, other modules, etc.	
Budget increase of $103,500.00 Capital	
Disposition: ☐ Closed ☐ Escalated ☐ Deferred ☐ Rejected	Date:

Approval for Implementation

Management:	Date:	
Comments / Steering Committee reference:		

Scope Change Request Form

Submitted by:	Hugh Smith	Date:	Feb 26, 2010	CR. #:	CR 25
Requested by:	Hugh Smith	WBS:	2.4.10 (new)	Priority:	Medium

Description of Proposed Change

ABSU cost for regression testing of the PAHR payroll system (PPM# 93625).

Benefits/Reason for Change

AS part of the FSR project, changes were made to the PAHR T&L data entry screens for capture of costing data. The existing PAHR support team believes there is a need to perform a full regression test of the PAHR payroll system.

Implications of Postponing / Not making the change

Risk that FSR changes will impact the payroll system.

Approvals for Investigation

Project Manager:	Hugh Smith	Date:	Feb 26, 2010
Comments:			

Investigated

Assigned to:	Hugh Smith	Date:	Feb 26, 2010

Although the FSR project team feels that it is very low risk that changes made to the cost distribution fields displayed in the time and labour capture system would have any impact on the execution of the patrol system, the PAHR support team feels the regression test is warranted based on recent issues with PAHR and the potential impact if a problem is discovered. Discussed with Enn Kiudorf, PAHR application owner.

Impact Analysis

On: budget, resources, project days, other modules, etc.

Budget increase of $28,787.00 Capital. No impact to resources or schedule as resources are external to the existing team.

Disposition: ☐ Closed ☐ Escalated ☐ Deferred ☐ Rejected Date:

Approval for Implementation

Management:	Date:	
Comments / Steering Committee reference:		

BC Hydro

Plan, Schedule and Work Management (PSW) Project

Project Charter (Version 6)

Date: December 18, 2009

Document Information and Revision History

Document Owner	Project Manager: David Cantrel
Document Purpose	The Project Charter defines the scope, objectives, approach, benefits, costs, and organization (including stakeholders and resources required) for the Plan and Schedule Work project.
File Name(s)	PSW Charter v5.doc
Stored at	Project document library
Original Author(s)	BC Hydro project team

Revision History:

Version	Date	Comments
0.5	9/28/2009	Initial draft by David Cantrel
1.0	10/1/2009	Updates based on feedback from Ann-Margaret Tait and Tony Houghton of Field Operations
1.5	10/16/2009	Updated based on add'l feedback from Tony Houghton and add'l context gained from reviewing original Accenture deliverables and other field operations documentation.
2.0	10/22/2009	Feedback from Tony Houghton, Don Stuckert and Ann-Margaret Tait. Updates made throughout, focused in on project team organization, roles and responsibilities.
2.1	10/22/2009	Updated project name, various updates for grammar and readability
3.0, 3.1	10/27/09	Updates based on input from Donia Snow and Don Stuckert
4.0	10/30/09	Updates based on 10/29 Steering Committee meeting, mostly contained to Section 6 Project Organization. Approvals also updated to reflect updated SC team
5.0	12/18/09	Updates from reviews by SC, Donna Hardie and David Hayes. Changes made throughout to clarify scope, resources and terms of reference.
6.0	12/22/09	Minor changes to BAT list and application scope

Approvals

Donia Snow
Senior General Manager, Distribution Services
Date: Jan 5/10

Maureen Daschuk
General Manager, Operational Support Services
Date: Jan 5, 2010

Luba Ebert
Manager, CP&A Strategic Asset Management
Date: Jan 5, 2010

Rosalie May
Strategic Issues Leader
Date: Jan 5, 2010

Bruce Misewich
Director, Regional Operations EARG
Date: Jan 8, 2010

Pat Sawatsky
Senior General Manager, Transmission and Construction Services
Date: Jan 6, 2010

Don Stuckert
Vice President and Chief Information Officer
Date: Jan 5/10

Eric Valois
General Manager, Distribution Operations
Date: Jan 5/10

TABLE OF CONTENTS

1. PROJECT OVERVIEW 6

2. SCOPE AND OBJECTIVES 7

2.1. PROJECT SCOPE 7
2.1.1. Processes and Work Types 8
2.1.2. People and Organization 8
2.1.3. Application Components 8
2.1.4. Technical 9
2.1.5. Other Scope 9
2.2. PROJECT OBJECTIVES 10
2.3. BUSINESS OBJECTIVES 11

3. GUIDING PRINCIPLES AND SUCCESS FACTORS 11

3.1. GUIDING PRINCIPLES 11
3.2. SUCCESS FACTORS 12

4. PROJECT APPROACH AND DELIVERABLES 13

4.1. PROJECT APPROACH 13
4.2. PROJECT SCHEDULE 13
4.3. DELIVERABLES 14

5. BUSINESS CASE 15

5.1. BUSINESS BENEFITS 15
5.2. COSTS AND BUDGET 15

6. PROJECT ORGANIZATION AND GOVERNANCE 16

6.1. TEAM STRUCTURE 16
6.2. TEAM MEMBERS 17
6.2.1. Core Team Members 17
6.2.2. Business Advisory Team 17
6.2.3. Subject Matter Experts 18
6.3. GOVERNANCE AND DECISION MAKING 18
6.4. ROLES AND RESPONSIBILITIES 20

7. PROJECT MANAGEMENT 23

7.1. PROGRESS REPORTING 23
7.2. SCOPE CONTROL 23
7.3. ISSUE MANAGEMENT 23
7.4. RISK MANAGEMENT 23

8. CONSTRAINTS AND DEPENDENCIES 24

8.1. EXTERNAL 24

8.2. REGULATORY 24
8.3. INTERNAL 25

9. ASSUMPTIONS 25

10. REFERENCE MATERIALS 25

1. PROJECT OVERVIEW

This project continues the work to enable Field Operations make improvements in business performance by implementing improved business processes and supporting technology to enable increased efficiency, effectiveness, customer satisfaction, enhanced safety and environmental compliance through better planning, scheduling and management of its various work streams.

This project will define the conceptual process and system design for the Field Operations work management project. This project is the first phase of an enterprise solution, with Field Operations driving out the design and development. Subsequent phases, and ultimately the implementation, will include other groups including EARG.

For the purposes of this project, Work Management is defined as all steps and technology included in the end-to-end business process to initiate, plan, design, schedule, dispatch, close, and analyze Field Operations work. Field Operations work execution (field work practices) is not in scope.

The input for this project is the Field Operations Business and IT Strategy; this work provided the strategic view of what needed to be done and why. This project will take the next step and define how that work should be done, with recommendations by whom and when.

This project is proposed as a logical approach to finalizing the Field Operations end-to-end work management requirements. These requirements will continue to feed the 'next level' of work needed to evaluate people, process, application, and technology components required, as well as determine the best approach for implementing the changes. Further, this work will also help refine the business case for the rest of the program.

As SAP has been chosen as BC Hydro's enterprise system under BC Hydro's IT&T strategy, it is considered the default solution. Requirements will be prioritized and first evaluated against the default solution, and will be and chosen if a majority (for example, 80%) of the requirements are met.

The following outcomes are expected at the end of this project:

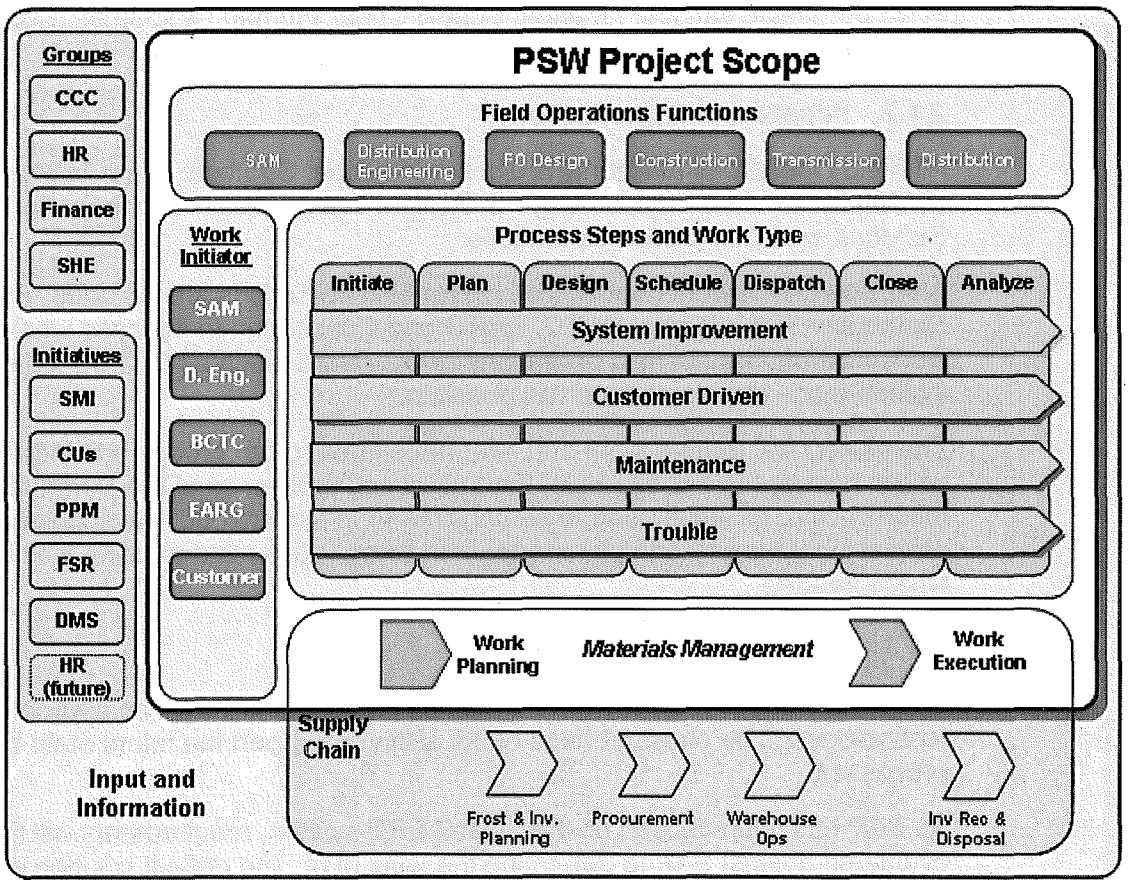
- Key current business and regulatory rules and policies that need review or change will be captured and documented for input to future state processes.
- High-level proposed *(future)* business processes, and the technology that will support them, are documented;
- For those business processes not supported by the default ERP solutions, a short-list of leading applications will be documented. The final selection of these applications is not in scope;
- Additional technical and application components required (mobility, for example) to support the business processed will be drafted and reviewed for feasibility and costs;
- Process and technology changes are understood well enough to identify the impact to personnel and subsequent change management issues and costs;

- Opportunities for organizational changes that will enable Field Operations to be more efficient and effective be identified;
- High-level implementation plans that outline the projects and efforts to reach the future state will be developed. It's expected that Quick Wins will be included;
- A business case will be developed, in sufficient enough detail, such that the costs and benefits of implementing the program will be clearer.

2. SCOPE AND OBJECTIVES

2.1. Project Scope

The scope of the previous business and IT strategy development work continues through to this project, and includes the following:



2.1.1. Processes and Work Types

All process steps, with one exception, in the work management lifecycle are included: initiate, plan, design, schedule, dispatch, close and analyze. The 'execute work' process step (i.e., field practices) is not in scope.

The following 'end-to-end' business process, also known as types of work, are included:

- Customer Driven Work Management (including BCTC)
- Maintenance (OMA and Capital) Work Management
- Outage Management (Trouble)
- System Improvement Work Management

The parts of the work management processes that touch other process areas are in scope. These include: Finance, Supply Chain, Human Resources, Customer Care, and Safety, Health and Environment.

2.1.2. People and Organization

All Field Operations functional areas are in scope: Strategic Asset Management (SAM), Distribution Engineering, FO Design, Transmission Services, Construction Services, and Distribution Operations.

Also, sources of work (work initiators) for field operations are included: SAM, Distribution Engineering, BCTC, EARG and Customers. In the case where the work initiators are not field operations or BC Hydro (such as BCTC), the project will include those groups as much as possible.

The project will require input and information from other groups and initiatives, where necessary. For example, the output and processes of the Smart Metering Infrastructure initiative need to be considered in this project. The scope of this project includes gathering information on those initiatives and using it as input where needed.

2.1.3. Application Components

The results of this project will be driven by process analysis. The appropriate technology will be chosen based on its ability to support the future state business processes.

As SAP has been chosen as the default ERP system, requirements will first be evaluated against SAP to determine the level of fit. The default solution will be selected based on the majority of the requirements being met and an impact analysis of the impact of those not met.

In order to support the core business processes that are in scope, it is expected that the following application components will be required: Enterprise Asset Management, scheduling, mobility and Supply Chain (particularly Materials Management as it relates to work planning and work execution).

There are numerous applications and systems that support the current state, including, but not limited to the following:

• Passport • Gateway • ClickSoftware • DAD / GIS • Customer Contribution Calculator • ISS • MDSI Advantex	• SAM Field • Service-Link • PowerOn • Incident Report System • Street Light Information Management (SLIM) • Various MMBU applications	• Veg Works • Spatial Asset Management • Cognos • Steady State System • Contractor Performance Information System

After it's determined where the default solution will support the processes, the project will evaluate the current applications to determine where there is overlap or duplication with the solution. The project will recommend where applications can be eliminated and the associated operating costs recovered.

The project will also determine where system interfaces are needed (between the solution and current applications). It's expected that interfaces to existing systems that house customer, finance, supply chain and human resources information will be needed.

2.1.4. Technical

Documentation that outlines any new technical architecture and infrastructure components, as well as changes to the existing components, needed to support the processes will be developed. These include Enterprise Service Bus (ESB), desktop configuration, telecommunications and security. This documentation will be reviewed for feasibility and provide the foundation for the program technology costs.

2.1.5. Other Scope

The following items are not in Scope:

- Field work business processes as they relate to the management of field work are in scope. Actual field work practices (the work itself) is not in scope. For example, the steps that a Power Line Technician takes to perform a job are not in scope.
- The business processes and project activities for the following groups and initiatives are out of scope for the PSW project. However, this project will require input and information from these groups to:
    - understand process and system touch-points with field operations work management;

- understand future plans or project schedule that may impact the scope and schedule of this project;
- engage important stakeholders from other parts of the business for relevant input and information

Groups / Departments	Projects and Initiatives
• Supply Chain • Customer Care • Human Resources • Finance • Safety, Health and Environment	• Smart Metering • Compatible Units • Program and Project Management • Distribution Management • Human Resources Information System

- Evaluating the functionality of current systems against the requirements, except for where the default solution doesn't support the future business process.
- Fleet Management, Corporate and Property Management are not in scope;

2.2. Project Objectives

The objectives of this project are as follows:

- Gather key current business rules and policies for review and input to the future state processes. Use known industry best practices and similar implementations as input to this project;
- Create and document the high-level future state end-to-end business processes;
- Document the technology that will be used to support the business processes. Identify where the default ERP solution will be used and where other applications will be required to meet functional requirements. Where possible, identify the leading candidates that may fit. The selection of the final technology, other than the default ERP, is out of scope.
- Identify the Change Management impact associated with process and technology changes. Document the high-level Change Management strategy;
- Identify organizational changes that will increase operational efficiencies;
- Quantify costs and benefits and create a high-level business case for the overall program;
- Create a realistic roadmap for implementing process and technology changes. This includes scope and timelines for subsequent projects or phases, including Quick Wins. Quick Wins are described as process and/or technology changes that achieve benefits with relatively little cost or effort that are aligned with the overall goals of the program.

2.3. Business Objectives

Identify the means by which Field Operations can make improvements in business performance through the use of improved business processes and technology to enable increased efficiency, simplified operations, reduced safety risks, and improved customer service. Key business drivers include:

- Improve operational efficiencies throughout the field operations work management end-to-end business processes;
- Implement up-to-date software to replace the current inefficient or ineffective systems;
- Simplify the technical IT environment and sustainment processes by consolidating additional business functionality on the existing ERP platform which BC Hydro already uses;
- Enable easier knowledge transfer, training and improved time on tools through simplified and standardized processes and technology;
- Provide for the creation of reliable metrics to accurately measure business performance.

3. GUIDING PRINCIPLES AND SUCCESS FACTORS

3.1. Guiding Principles

This project will use the following principles:

- Standardize and Simplify. Where possible, processes common across work types and/or process steps will be standardized and simplified in order to increase usability, improve time on tools and support change management;
- Align with Strategy. The project aims to align with key field operations and IT&T strategies where possible, such as improving time on tools, safety by design and leveraging the default ERP platform;
- Leverage Existing Materials. The project acknowledges the hard work by many field operations resources on this effort so far; this project will build on that work;
- Provide Clarity. The project will endeavor to provide clarity on process and technology changes required to support the business, the impact of the changes to the business and the timelines required to implement them;
- End-to-End Process View. The project will take an 'end-to-end' approach in process analysis; that is, reviewing the entire business process from start to finish ensuring all groups, steps and integration points are covered.
- Teamwork. The project team and Steering Committee members will manage or oversee the Project based on a "One Hydro" approach, meaning the overall interests of BC Hydro will prevail in any case where individual Business Group interests may differ;

3.2. Success Factors

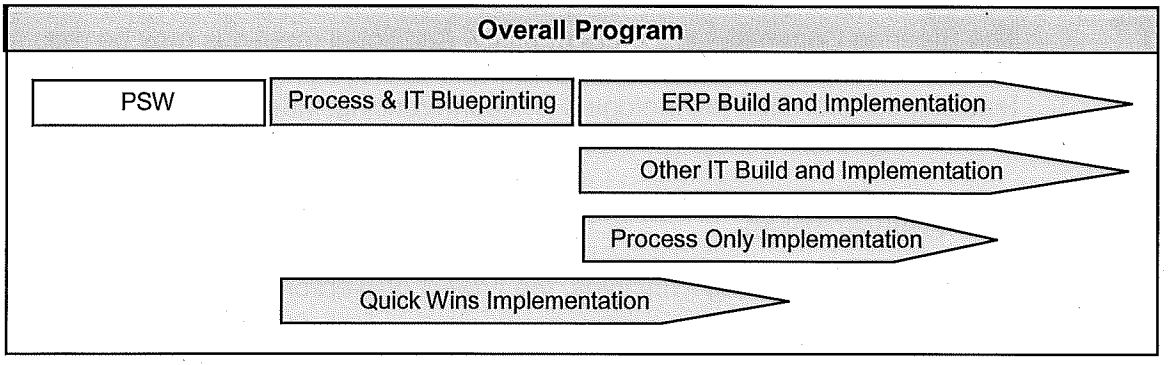
The success of this project, and subsequent project phases, will depend on the following:

- having a strong executive sponsor that is committed to, and acts as a champion for the project;
- a strong, full-time business lead that will represent field operations;
- proper positioning and communications with the business groups. This project has been on-going; and there may be a need to manage the perception what the project is 'churning';
- the ability for the business unit team members to a) be empowered to make decisions where appropriate (as part of the core team), b) be committed to the project and c) act as champions for the project, process and solutions;
- the ability for all business groups within the project scope to work in collaboration and partnership, yet respect the need for timely decision making;
- the ability for all groups to bring, and make available as required by the project, the best qualified resources;
- the ability to document the change impact and develop change management strategies to address the impacts;
- the ability to document, articulate and communicate the business benefits for the groups impacted by the changes;
- the ability to create an achievable implementation timeline that provides a roadmap for the required changes;

4. PROJECT APPROACH AND DELIVERABLES

4.1. Project Approach

In general, and to remain consistent with other SAP projects, the longer term program will follow SAP's ASAP methodology. This is illustrative only as subsequent project phases and timelines are not to scale and are subject to definition and approval.

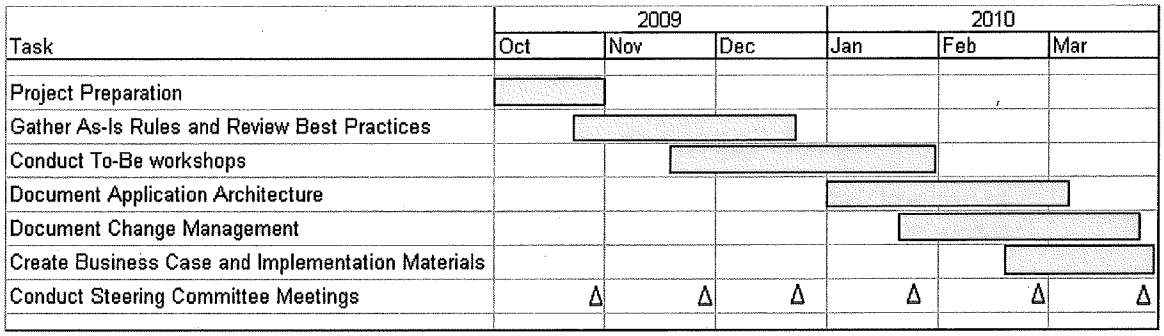


This project is the Plan, Schedule and Work Management (PSW) Project (yellow) box and marks the beginning of the longer term program. The approach to this project can be outlined as follows:

- Project Preparation: Secure resources, including external consultants, clarify project organization, allocate project space, prepare Project Charter, develop work plan and schedule;
- Gather current Business Rules and Policies: Gather key business rules and policies current used to define and manage field operations work;
- Define future state: Conduct meetings and workshops with SME's and business advisory team members to further define future state processes and technologies.
- Refine the high-level technical and application architectures;
- Create and refine business case documentation and high level implementation and change management documentation;
- Conduct monthly steering committee meetings, as well as other meetings required to communicate status, resolve issues and mitigate risks.

4.2. Project Schedule

The project is expected to start in October 2009 and end March 31, 2010. A high level schedule of activities follows:



The Steering Committee will meet monthly. Additional meetings may be required toward the end of the project schedule to review and approve project documentation. Where feasible, collaboration technologies (teleconferencing, video conferencing, etc.) will be used throughout the project.

4.3. Deliverables

Leveraging the Guiding Principles, the project deliverables are intended to provide clarity to the roadmap.

- High-level current process documentation as well as key current business rules and policies for review and input to the future state processes.
- High-level proposed process documentation describing how work will be performed in the future. This documentation should include work types in scope, across the end-to-end business process. It will also indicate which type of technology will be used to each process and metrics to be used as a starting point to measure business performance;
- High-level technology architecture describing which application and technology components will be used to support the business processes. Short lists, or final selection of technology, will be outlined;
- Strategic Decision Documents, which outline the analysis and recommendations for key business, organizational and technology decisions that support the overall design.
- Change Management Impact Assessment and high-level Change Management Strategy which documents the change impact, its magnitude and what strategies can be used to enable the change. Where possible, these will be integrated into the overall implementation plan.
- Implementation plans that describe scope, activities, schedule and resources required for implementation. Plans will outline quick wins and consider other BC Hydro initiatives;
- Business case documentation with sufficient details, as required for approvals for the subsequent phases of the program.

5. BUSINESS CASE

5.1. Business Benefits

The benefits for the Plan, Schedule and Work Management project are intangible as this is an interim step leading to the development of an overall business case. The benefits from this effort are:

- Clarification of the path forward. Further refinement of the field operations roadmap to include business process and technology changes required to support current and future business and technology requirements;
- Reduction in implementation risk. This project will allow BC Hydro to better plan the work ahead, thus reducing risk and allowing for better resource and IT alignment with field operations and OCIO plans.

5.2. Costs and Budget

A maximum budget of $1.1M (all OMA) has been approved for the completion of this project. The project budget will be managed and reported to the Steering Committee via the regular status reporting procedure.

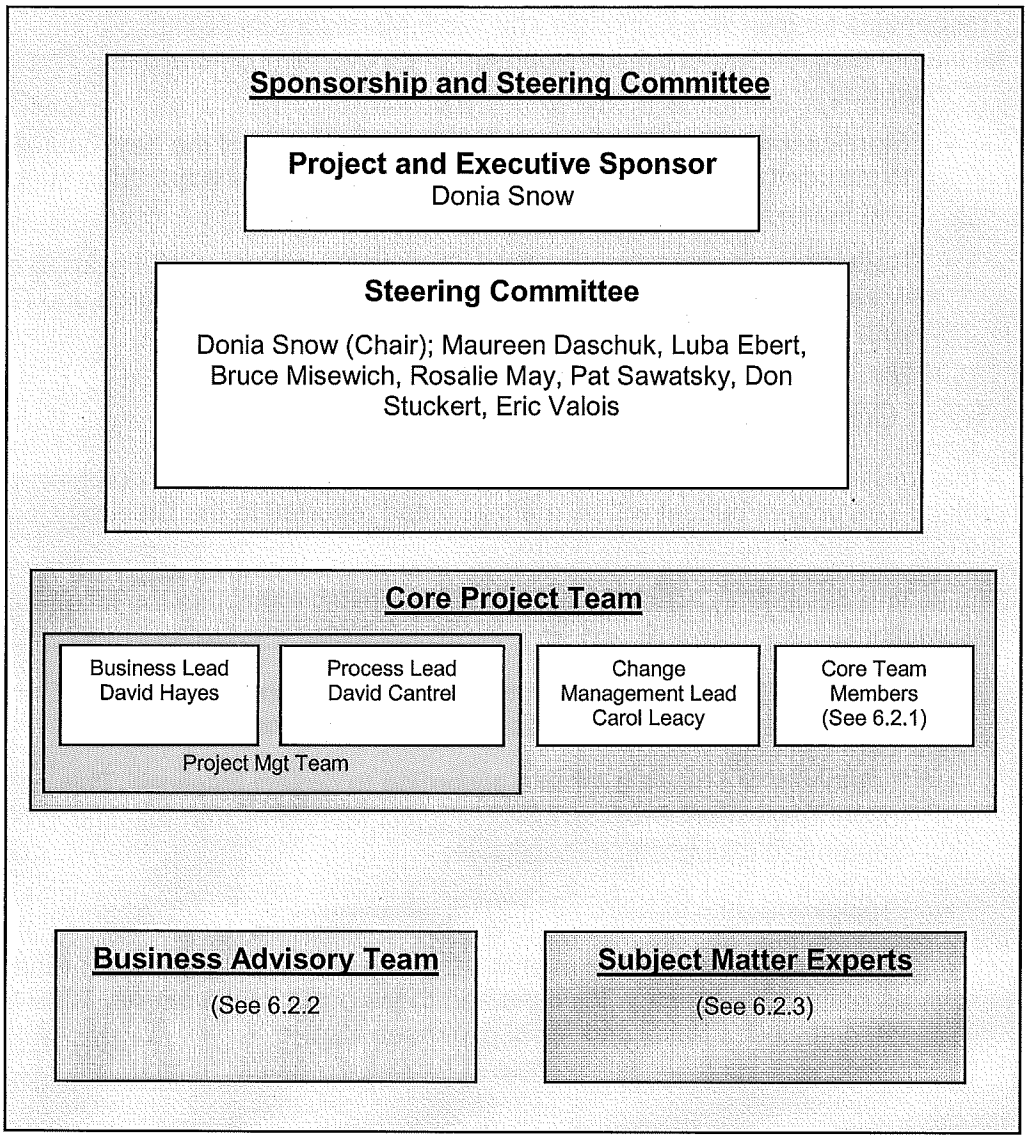
The estimated monthly breakdown follows. These estimates use the following assumptions:

- Includes estimated loaded costs of core team members. Steering Committee, Business Advisory and SME team members are not included.
- Resources are made available according to project timelines. This assumes that all resources, except Process Lead / Project Manager, start full-time in November. September expenses are negligible;
- Project end date of March 31, 2010;
- Modest expenses for two events – training or site visits, for 2 – 3 team members, as deemed necessary. It's assumed these occur in November, 2009 and January 2010. Includes travel and misc. expenses also.

Type	10/2009	11/2009	12/2009	01/2010	02/2010	03/2010	Totals
Resources	154K	154K	154K	154K	154K	154K	770K
Expenses		11K		19.5K			30.5K
Totals	154K	165K	154K	173.K	154K	154K	800.5K

6. PROJECT ORGANIZATION AND GOVERNANCE

6.1. Team Structure



6.2. Team Members

6.2.1. Core Team Members

Name	Role
David Hayes	Field Operations Business Lead
David Cantrel	Process Lead / Project Manager
Luis Gonzalez	Solution Architect
Johanny Moreno	Solution Architect
Carol Leacy	Change Management Lead
Tim Kikkert	Process Analyst
Michael Chose	Process Analyst
TBD	Process Analyst
Tom Burns	Super Stakeholder - Distribution
Anthony Gamage	Super Stakeholder - Construction
Grant Macdonald	Super Stakeholder - Transmission
Tony Houghton	Super Stakeholder – Integrated Resource & Work Management

6.2.2. Business Advisory Team

Name	Area
Don Bauerfind	Safety, Health and Environment
Brad Bishop	SMI and Metering
Anthony Gamage	Construction Services
Tony Houghton	Integrate Resources and Work Mgt
Enn Kiudorf	SAP Enterprise Lead
Tom Burns	Distribution Operations
Brian Lochansky	Materials Management
Grant Macdonald	Transmission Services
Wayne Martell	Line Process
Charlotte Mitha	Non-Integrated Services
Ingo Moxon	Design Process
Warren Quan	Trouble Center
Chris Weyell	Asset Management, EARG
Donna Hardie	FO Strategic IT
Luba Ebert	Strategic Asset Mgt.
Ann-Margaret Tait	Chief Process Architect

6.2.3. Subject Matter Experts

Subject Matter Experts (SMEs) will be engaged from across Field Operations and other KBUs (notably EARG) as required throughout the project. The principles for selecting SMEs will be their experience and ability to represent the various functions.

6.3. Governance and Decision Making

The following section outlines the project structure, roles and responsibilities with regard to how the project will be governed and how key decisions will be made and approved.

The Project has four groups: Sponsorship and Steering Committee, Core Project Team, Subject Matter Experts, and Business Advisory Team. The general role of each with regard to governance and decision making is outlined in the following table, and the description of individual roles and responsibilities is outlined in section 6.4.

Project Body	Governance / Decision Making Role
Sponsorship and Steering Committee	• Provides the mandate to the Project Management Team to deliver the project per the items defined in this charter • Ensures the appropriate Project Governance procedures and practices are in place and are followed through-out the project • Receives periodic updates from the Project Manager on the progress and status of the project • Makes changes as necessary to the project governance structure to best ensure the successful outcome of the project • Review "key" decisions, and approve design decisions involving organizational changes, submitted by the Core Project Team, in a timely manner as to minimally impact overall project schedule; • Makes design decisions where needed by the Core Project team, where the Core Project Team is unable to do so, or where the feedback from the Business Advisory Team is in conflict with decisions made by the Core Project Team; • Steering Committee team members themselves will make every effort to attend the Steering Committee meetings; • The Steering Committee will meet at a minimum monthly, and more frequently at the request of the Project Manager or the Steering Committee; • The Steering Committee will determine the need and timing of any necessary internal or external authorizations (for example, from the ET, the BC Hydro Board of Directors, or the BC Utilities Commission). The Project Manager will coordinate the delivery of any information required by the Steering Committee to fulfill this responsibility. The Project Team will proceed on the assumption that any necessary approvals / authorizations are in place unless otherwise advised by the Steering Committee.

Project Body	Governance / Decision Making Role
Project Management Team	• Receives the mandate from the Project Sponsor and Steering Committee to deliver the project per the items defined in this charter; • Is empowered to develop and execute the required project management plans. Detailed Project Management Plans are available for review by the Steering Committee upon request; • Provides work assignments to the Core Project Team, and monitors the progress of these assignments; • Provides periodic updates to the Steering Committee; • Is empowered to make design decisions necessary to develop and implement the most appropriate solution per the objectives, scope, and guidelines defined in this charter. "Key" design decisions (including Strategic Design Decisions) will be reported to the Steering Committee for review. Design decisions involving organizational changes will be submitted to the Steering Committee for approval; • Wherever possible, the Core Project Team members will be assigned full-time to the project. Where members are not full time, this will be managed as a project risk.
Business Advisory Team	• The Business Advisory Team represents the end users of the solution are used to help assess the impact the solution will have on the business; • The Business Advisory team does not have any decision making authority on the project; • Feedback on the design and the solution will be gathered from the Business Advisory Team through workshops and meetings facilitated by the Core Project Team. The output from these sessions will be reviewed with the Steering Committee. Items where the feedback from the Business Advisory Team is in conflict with the design decisions made by the Core Project Team will be submitted to the Steering Committee for decision.
Subject Matter Experts	• The Subject Matter Experts (SME's) provide input and take part in design discussions and decisions, but do not have a specific role to play in the governance of the project.

6.4. Roles and Responsibilities

The roles and responsibilities for the Project are summarized in the following table:

Roles	Responsibilities
Project and Executive Sponsor	• Appoints the Steering Committee; • Obtains / ensures ongoing organizational commitment, including Business Groups, Subsidiaries, the Executive Team and the Board of Directors; • Ensures strategic alignment, establishes the priority for this Project relative to other strategic priorities and ensures appropriate resource deployment; • Is a visible and vocal advocate for the project and implementation; Provides Steering Committee with timely access to the Executive Team, as necessary, to obtain consents or resolve issues; • Supports change management and communications; • Chairs the Steering Committee meetings; • Provide final and binding decision making authority where the Steering Committee is unable to reach consensus
Steering Committee Members	• Responsible for overall governance of the Project. Provide advice to the project on behalf of their Business Group and guide the Project on a basis that will provide the best outcome for BC Hydro as a whole; • Provide input into, and approves, the Project Charter; • Appoint the Business Lead; • Have sufficient understanding of the Project plan to ensure the overall Project Charter objectives and principles will be satisfied; • Attend all Steering Committee meetings in person and receives and approve regular reports regarding project progress, completion of key project milestones, schedule, budget, and risks; • Will review and make decisions put before them in a timely manner, with minimal impact to the project schedule; • Ensures qualified resources are made available to the project, when required; • Review and approve significant changes to scope, budget and timelines; • Review and approve project costs, and ensure business case and adequate corporate funding is in place; • Provide direction on recommended policy and business rule changes; • Review cases where customizations or non standard processes are recommended or necessary; • Review all key decisions made by the Core Project Team; • Review and approves all design decisions involving changes to the current organization structure; • Provide decisions where the feedback from the Business Advisory Team is in conflict with the design decisions made by the Core Project Team; • Support change management and communications; • Are visible and vocal advocates for the project and its implementation.

Roles	Responsibilities
Project Manager	• Accountable for acceptable completion of the Project plan tasks on time, in scope and on budget; • Responsible for ensuring coordination and integration of project deliverables and timelines with related initiatives identified in the Project Charter or, otherwise, as identified by the Steering Committee; • Responsible for developing all project plans and managing the overall Project delivery, and achievement of targeted Project performance metrics; • Responsible for escalation and coordination of issues to ensure timely resolution; • Maintains issues log, reports on project risks, and ensures mitigation plans are developed and implemented on a timely basis; • Works to ensure the Project approach and methodology aligns with BC Hydro standards and is reusable on other implementation projects; • Supports change management and communications;
Field Operations Business Lead	• Accountable for acceptable completion of the Project objectives with respect to business policy, rules and process; • Works in coordination with the project manager to manage scope, activities, deliverables and budget; • Provides oversight to ensure that business process and system design meets operational requirements, and consistent with Project objectives and principles; • Receives and provides input to related projects to ensure consistency / alignment of process designs; • Approves process designs; • Provides or identifies subject matter expertise as required; • Supports change management and communications; • Determines which design decisions are to be categorized and managed as "key" design decisions
Core Project Team Members	• The Project Core Team is the primary working group and is comprised of individuals assigned either full time, near full time or contribute significantly to the project; • The team is empowered to develop and implement the best solution design based upon the scope, objectives and guidelines in this charter, and taking into account the input from the business and the capabilities of SAP; • The team has responsibility for day to day delivery and outcomes of the project

Roles	Responsibilities
Business Advisory Team	• The Business Advisory Team represents the end users of the solution and are used 1) to help assess the impact the solution will have on the business and 2) act as a champion for the solution within their respective business areas; • Provide information and requirements on behalf of the business, and work with the core design teams to assess solution alternatives and develop future state designs; • Where necessary, the Business Advisory team may engage other members of their business for input, details and clarification. If this is required, the Business Advisory team member is expected to complete that work within the timelines outlined by the project manager, in accordance with the project schedule; • Provide input to Strategic Design Decisions as needed. Items where the feedback from the Business Advisory Team is in conflict with the design decisions made by the Core Project Team will be submitted to the Steering Committee for decision.
Subject Matter Experts	• Provide information and requirements on behalf of the business, and work with the core and business advisory teams. • It is expected that SME's will likely have to consult with others in their business areas in collecting details and clarifying requirements. The SMEs' primary interaction with the core project team will be through design workshops which will be organized and facilitated by the core team members.
Other SMEs as needed	• BC Hydro may retain additional external advisors and subject matter experts to ensure the project has the comprehensive expertise needed to deliver high quality and authoritative project outcomes. • These external advisors will be managed by and report to BC Hydro via the Project Manager. • It is the intent of BC Hydro to include such advisors within the overall project team to foster open and informed discussions amongst team members, with a view to optimizing the target system design consistent with the objectives and principles established in this Charter. • These advisors may attend workshops, produce deliverables, participate in team meetings, etc. as directed by the project manager.

7. PROJECT MANAGEMENT

The Project Manager is accountable for the development, execution, and monitoring of the project management plans in keeping with the governance structure outlined in this charter. The following required elements will be included within the appropriate management plan

7.1. Progress Reporting

The project will report progress via periodic status reports, which will be prepared to coincide with the Steering Committee meeting schedule (e.g. bi-weekly or monthly depending on the stage of the project.

7.2. Scope Control

- Project scope will be controlled via the project manager through an escalation process to the Steering Committee;
- Proposals to amend the project scope will be documented by the project manager and tabled for review and approval by the Steering Committee.

7.3. Issue Management

- The project manager will arrange for a formal issue log of project issues to be maintained;
- High priority open issues will also be reflected on current status reports to ensure visibility to the Steering Committee and Project Coordination Committee.

7.4. Risk Management

- The project manager will arrange for a formal project risk register to be developed and maintained;
- This will be done in coordination with BC Hydro's risk management group to ensure a consistent and rigorous approach to risk;
- Key risks (high impact and/or high probability) will also be reflected on current status reports to ensure visibility to the Steering Committee and Project Coordination Committee

The following risks have been identified going into this project.

Item	Risk	Mitigation
1	Lack of resources due to other projects and / or significant planned (Olympics) or unplanned (storm season) events.	• Prioritize and front load as much as possible to minimize impact of Olympics; pre-schedule as many workshops and meetings as possible. • Reduce dependency on the standard set of resources by identifying alternates and reviewing resource needs; • Reduce workshop size and teams to minimize scheduling impacts;
2	Other high priority activities dilute Sponsor and Steering Committee commitment, which, in turn, impact perceived priority by other resources.	• Appropriate messaging and resource commitments from Sponsor and Steering Committee • Participation in Steering Committee meetings; review of regular status updates;

8. CONSTRAINTS AND DEPENDENCIES

The following could impact this project; these will be monitored and managed as project risks and/or issues.

8.1. External

- The 2010 Winter Olympics. The Olympics will potentially impact field operations resource availability from January 31 – March 31, 2010. The project will work with field operations to schedule resources such that the impact to the project will be minimized and the ability for FO personnel to respond to incidents remains the highest priority.
- Seasonal Operations Demand (Storm Season). Potential resource constraints, or lower project focus, due to unplanned operations events.

8.2. Regulatory

- None at this writing.

8.3. Internal

- Smart Meter Initiative (SMI). This initiative will need potentially need similar-skill resources. The resulting process and technology impact to field operations may also need to be considered in this project.
- Other Projects. This project will stay remain in contact with other SAP initiatives that could potentially impact this work, such as PPM, Finance and HR. Further, on-going development or upgrading of Field Operations IT systems (via FO BIS group) will need to be identified.

9. ASSUMPTIONS

- The required project resources are available according the project schedule;
- Project issues and strategic design decisions impacting the scope, schedule, resources and costs are resolved as quickly as possible, with minimal impact to project schedule.

10. REFERENCE MATERIALS

- Field Operations Business and IT Strategy (and all associated documentation), December, 2007 by Accenture, in collaboration with BC Hydro;
- Documented As-Is business processes;
- BC Hydro IT&T Strategic (5 year) Plan;
- Field Operations Strategic Roadmap Implementation Discussion (Work Management Process Redesign); Updated September 19th, 2008 by Ann-Margaret Tait

BC Hydro

Plan, Schedule and Work Management (PSW)

Phase 2 Design

Project Charter

Table of Contents

Table of Contents 2
Document Information 4
Revision History 4
Approvals 5
1. Project Overview 6
2. Project Objectives and Guiding Principles 8
2.1. Project Objectives 8
2.2. PSW Project Guiding Principles 9
2.3. Measures of Success 10
2.3.1. Project Success Measures 10
2.3.2. Business Success Measures 10
3. Scope 11
3.1. Process Scope 11
3.2. Organizational Scope 12
3.3. SAP Functional Scope 13
3.3.1. SAP Functional Solution Overlaps 14
3.3.1.1. Overlap with existing SAP Footprints (FSR, PPM, CCS) 14
3.3.1.2. Overlap with other SAP Initiatives (SMI and Empower) 16
3.3.1.3. Overlap with other Non-SAP Initiatives (DMS) 17
3.4. Interface Scope 17
3.5. Data Cleansing and Conversion Scope 18
3.6. Reporting Scope 19
3.7. Other Miscellaneous Scope 20
3.8. Not in Scope 20
3.8.1. Supply Chain Management 20
3.8.2. Asset Management 20
3.8.3. Other Areas Not in Scope 21
3.9. PSW Quick Wins Scope 21
4. Constraints and Dependencies 22
4.1. Constraints 22
4.2. Project Dependencies / Related Initiatives 22
5. Project Approach 24
5.1. Overall Approach 24
5.2. High Level Schedule 24
5.3. Deliverables for the Design Phase 24
5.4. Change Management 25
6. Project Organization and Governance 27
6.1. Team Structure 30
6.2. Team Organization and Responsibilities 30
7. Project Management 35
7.1. Progress Reporting 35
7.2. Scope Control 35
7.3. Issue Management 35
7.4. Risk Management 36
7.5. Quality Assurance 36

7.6. Project Management Tools 36
8. Budget 36
9. Benefits Realization 36
10. Appendixes 38
10.1. Appendix A-Functional Scope 38
10.2. Appendix B-Interface Scope 40
10.3. Appendix C- Conversion Scope 42
10.4. Appendix D- Enhancement Scope 44

Document Information

Document Purpose	The Project Charter defines the scope, objectives, project team responsibilities, constraints and dependencies, and other project attributes for the PSW Project Phase 2.
Document Owner	David Cantrel, Project Manager
Business Lead	Ken McKillop
File Name(s)	PSW Ph2 Project Charter.doc
Stored at	
Original Author(s)	David Cantrel

Revision History

Version	Date	Author	Comments
DRAFT	5/13/2010	D. Cantrel	Initial draft
	10/2/2010	D. Cantrel	Updates
	10/21/2010	D. Cantrel	Updates
	11/30/2010	T. Peachey	Updates
	12/01/2010	D. Cantrel	Updates
	12/02/2010	T. Peachey	Updates
Review	04/05/2011	Jan Zhang	Reviewed and cleaned up a few sections. Removed QuickWin Release 2 contents since no longer applicable.

Approvals

David Lebeter, Chair Vice President, T&D Operations and Safety	Date
Don Stuckert, Steering Committee Member & Co-Sponsor Vice President and Chief Information Officer	Date
Lori Finskars, Steering Committee Member & Project Director General Manager, T&D Resource Allocation	Date
Maureen Daschuk, Steering Committee Member General Manager, Operational Support Services	Date
Julius Pataky, Steering Committee Member Vice President, Asset Investment Management	Date
Mark Poweska, Steering Committee Member Director, Generation Operations	Date
Pat Sawatsky, Steering Committee Member Senior General Manager, T&D Field Operations	Date

1. PROJECT OVERVIEW

This project will enable Transmission, Distribution and Generation business units to significantly increase operational efficiencies by re-engineering business processes, changing the organization and implementing new technology to support the work management lifecycle. Current business processes and technologies make it difficult for the company to optimize the utilization of its resources. A number of issues exist:

- *Uncoordinated Work Streams*: Work is managed without a comprehensive and consolidated view of resources. Work is not bundled to optimize internal resources, contractors, materials and equipment;
- *No Single Source of Truth or Common View of Work*: Supporting the isolated work streams are multiple systems for work initiation, planning, design, dispatch and execution. No single, integrated view to work exists;
- *Different Software Applications*: Multiple systems are involved in managing work streams that are not fully integrated and do not provide data and information in consistent formats.
- *Technology Does Not Align to Business Processes*: System and process changes have not historically been integrated resulting in legacy systems that do not align to the underlying business process they are supposed to support;

The objectives of this project are to optimize resources, create process consistency, and enhance safety and planning by leveraging technology across the four major work streams: Customer, Capital, Trouble and Maintenance.

This project continues work done in Phase 1. Phase 1 defined high level work management business process, technology and change management designs, as well as cost/benefit information and a high-level implementation plan. The project Steering Committee agreed to continue with Phase 2 Design to define the detailed end state business processes, address the outstanding issues from Phase 1 and develop an implementation plan and supporting detailed business case.

The project will define and document the detailed (Level 3)* business processes for the following end-to-end work management business processes: Customer Driven, Trouble, Maintenance and Capital (System Improvement / System Resilience).

All sub-processes within the work management lifecycle are in scope: Initiate, Plan, Design, Schedule, Dispatch, Execute, Close and Analyze. The business units involved are Transmission, Distribution and Generation. It is recognized that Generation doesn't have all end-to-end business processes (Customer, e.g.) and will participate in the design accordingly.

End-to-End Process, Sub-process and Business Unit Scope		
♦ Customer Driven ♦ Trouble ♦ Maintenance ♦ Capital	♦ Initiate ♦ Plan ♦ Design ♦ Schedule ♦ Dispatch ♦ Execute ♦ Close ♦ Analyze	♦ Transmission ♦ Distribution ♦ Generation

This is a business driven project, where business processes and requirements will help define the organizational and technology designs. Requirements will be prioritized and evaluated against the default or backbone ERP system (SAP). Where SAP doesn't meet the requirements, the gap will be assessed and a recommendation will be made.

The following outcomes are expected at the end of this project:

- Updated end-to-end business processes for the four major work types. These business processes are reviewed and agreed to by business stakeholders.
- Business and functional requirements that support the business processes.
- Organizational impact and assessment of the business process design, including impacts to roles, functional and organizational structure.
- Change Management and Communications Strategies and tactical plans for PSW, as well as the Design Phase.
- Implementation of the Meter Exchange Quick Win (two releases).
- Recommendations for changes to business rules and policies required to implement the change.
- Recommended implementation scope and plan.
- Updated business case.

2. PROJECT OBJECTIVES AND GUIDING PRINCIPLES

2.1. Project Objectives

The objective of the PSW Project is to transform the way BC Hydro plans, schedules and manages the Maintenance, Capital, Trouble and Customer Driven work in the Generation, Transmission and Distribution areas.

Specifically, the PSW Project's objectives are to:

- Optimize Resources. Increase resource efficiency and labour and achieve material and labour cost savings by making all work visible and enabling better long term and short term planning and scheduling. This includes:
  - Increased work and resource visibility (work, resources, materials and equipment)
  - Increased time on tools through dispatching the right work, to the right resource, at the right time
  - Understanding and managing unproductive time and overtime
  - More time spent on higher value work, such as coaching, mentoring and safety, and less time on administrative activities
  - Optimize work around planned outages
  - Better equipment and material utilization. Long term planning enables bundling work and material needs and investigating strategic sourcing arrangements.
- Create Consistency and Accountability. Create a scalable, consistent approach to work where all work flows through an integrated planning, estimating, scheduling and dispatch function, using the same principles regardless of work type or location. Establish metrics and create the tracking of actual performance against targets.
- Leverage Technology. Use technology to support work management business processes, including the following:
  - Use of mobile devices in the field for electronic dispatch, execution and closing of work.
  - An integrated solution that is the single source of truth for all work management reporting
  - Use automation to reduce time spent on administrative activities, increasing time on tools and safety
  - Provide tools for complex tasks such as schedule optimization

The objective of the Design Phase is to deliver the detailed process, organizational and technical designs, as well as the change management plan, implementation plan and business case needed to meet that objective.

The Design Phase will develop the detailed future state end-to-end business process designs and business requirements for implementation. This phase will answer key

scope and supporting tool questions, as well as develop a change management strategy and plans required to support the new processes.

An implementation roadmap will be developed and the business case will be updated. Finally, the project will design and implement the Meter Exchange Quick Win. The Meter Exchange Quick Win is an initiative within PSW whose primary objectives are to increase visibility of Measure Canada-based meter exchange work, use technology to better plan, schedule and report on the work and provide a solution that will be scalable to accommodate the increased activity expected by the Smart Meter Infrastructure (SMI) project.

2.2. PSW Project Guiding Principles

The PSW project (Steering Committee members, BAT members, SMEs and the Project Team members) will adhere to the following project Guiding Principles:

OVERALL	• Transformational Change. Start with the end goal of transformational change in mind. Think outside the box. Change the approach to change the outcomes. • Business and Leadership Ownership & Accountability. Ensure that ownership and accountability for the Plan Schedule Work Project changes resides within the business (not within the project structure). Ensure leaders are accountable for developing commitment to the changes that will be introduced with this project. • One Hydro. Adopt a One Hydro approach, meaning the overall interests of BC Hydro will prevail where individual business groups' interests may differ. Develop project outputs within the context of other BC Hydro priorities – safety, environment, quality. • Decisions will be Documented (Decision Gate Points). Build in diligence and structure by using Key Decision Documents (KDDs) to evaluate and document key decisions made throughout the design process. • Build In Sustainment. Design sustainment activities, processes, resources, and organizational structure to help ensure that the transformational changes are sustainable over time. Leverage the existing organizational practices, structure and systems that support the change. Address those that do not.
PROCESS	• Business Process Driven. Re-engineer and simplify work management related business processes to achieve consistency and standardization, where possible, across all work types and geographies. • End-to-End Process View. Take an 'end-to-end' approach in process design, ultimately re-engineering the process from start to finish, ensuring all groups, steps and integration points are covered. • 80/20 is adequate. Adopt the 80/20 principle in re-designing business processes and evaluating functional and technical requirements. Define which processes must be defined in full detail (80) and which things are exceptions that do not need the same level of attention (20).
TECHNOLOGY	• Leverage Default Solution. Evaluate process, system and functional requirements derived from the business process redesign against SAP, BC Hydro's default ERP system, to determine the level of fit. Identify fit and gaps in order to leverage the system to its fullest and determine options for closing those gaps (e.g. develop interfaces to existing or new systems where required, decommission existing systems when possible).

	• Align with IT Strategy. Align with IT&T Strategy to maximize the potential of a single vendor enterprise systems environment, thus reducing the number of systems required to support current and future business practices.
PEOPLE	• Develop Stakeholder Commitment. Proactively plan and implement strategies to develop stakeholder commitment. Meaningfully involve people. Foster their awareness and understanding of the changes. Develop their ability to implement the changes. • Leverage Leadership. Involve leaders first and recognize that their involvement and support is critical to the success of the project and to developing stakeholder commitment.

2.3. Measures of Success

2.3.1. Project Success Measures

The success of the Design phase of the project will be assessed based on achieving the following measures:

- Successful completion of deliverables listed in section 5.3 Deliverables for the Design Phase
- Successful implementation of Quick Wins Release 1

2.3.2. Business Success Measures

The Business Success Measures will be documented the Benefits Realization Plan" once the final version of the Business Case has been completed.

3. SCOPE

This is an enterprise initiative that encompasses the work management lifecycle for Transmission, Distribution and Generation. Scope is defined in three dimensions: process, organizational and technical.

3.1. Process Scope

This is a business-driven process re-engineering project, where the project team will work closely with the Transmission, Distribution and Generation business representatives to define the future state business processes, which will likely be different from what exists today. These future state processes will be vetted and validated with the business and business leadership.

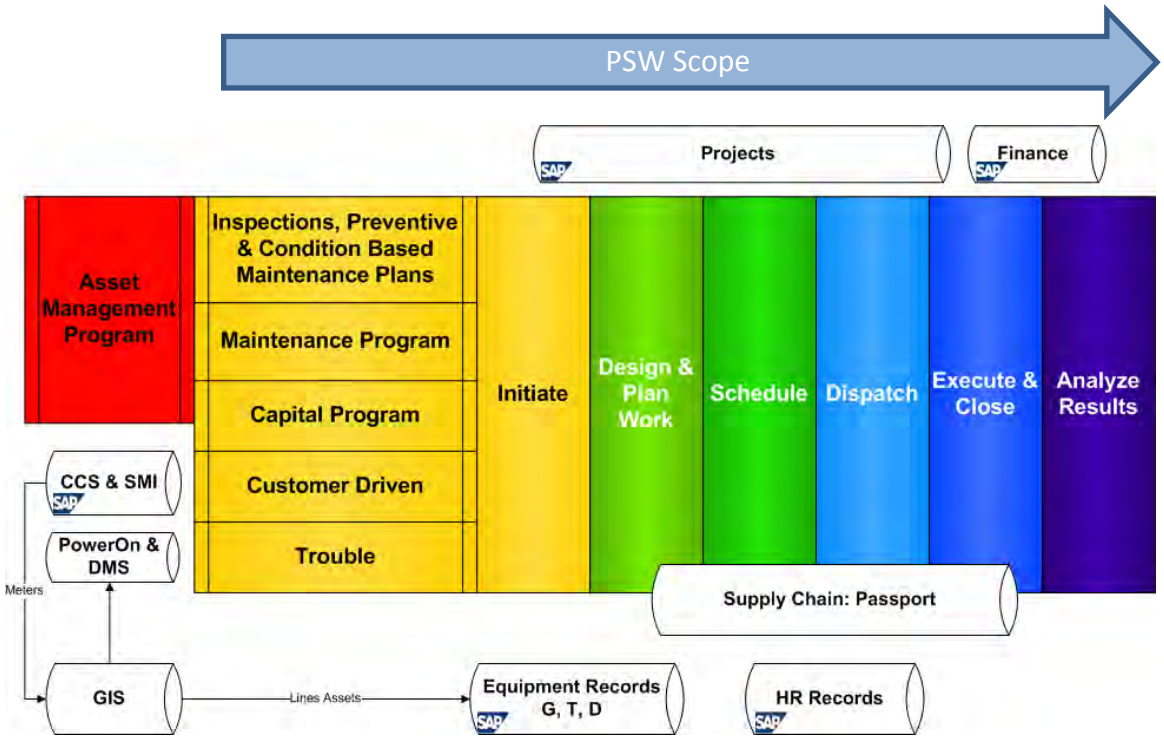
Included in scope are the end-to-end business processes for the following major work streams, and their components:

- Trouble, Maintenance, Customer Driven and System Improvement/Capital

To that end, all process areas in the work management lifecycle are included:

- Initiate, Plan, Design, Schedule, Dispatch, Execute, Close and Analyze

PSW processes have several touch points with other process areas such as asset management, project management, customer care, smart metering, outage management, finance, and human resources.



Clarifications for some of the PSW sub-processes are below.

Initiate: The Initiate process area is where a request to do work is generated, either from an external customer (e.g., developer, rate payer), an internal customer (e.g., engineer), or from a program, such as an Asset Management. This process validates the work and ensures that there is sufficient basic information to enable a work request to be generated.

Plan & Design/Engineer: This process identifies resources requirements and timing for the work. Resource requirements include labour (crews and contractors), materials, tools, specialized equipment and permits. In planning, resources are represented generically (e.g., a crew type, a skill set or equipment type) rather than specifically. Other requirements identified, which are not resources, are procedures (e.g. Safety Procedures) and work instructions. The timing is represented by a time window using start and end dates (e.g., 1 to 2 years).

Schedule: This process schedules the work to be completed by matching specific resources (e.g., crews, contractors, materials, tools, specialized equipment and permits) to the work order as well as managing job dependencies (e.g., flaggers, safety training). This process also assigns start and completed by dates to the work orders based on business rules (e.g., customer deadlines). The main goal is to prioritize and optimize the specific resources required to complete the work in a defined time window (e.g. 3 to 4 months in advance).

Dispatch: This process ensures that scheduled specific resources are available and have the capability of completing the work as scheduled. This process also allows last minute changes to scheduled resources due to scheduled outages, crew switching, unavailability of materials, tools and specialized equipment as well as delayed permits. The main goal is to confirm the required resources for the work as well as all job dependencies (e.g. permits, materials) within a defined time window (e.g. 2 weeks in advance from today's day).

Execute and Close: The Execute sub-process area includes those steps associated with doing the work, such as retrieving and entering data for that job type. Field work practices are not in scope. For this Phase, Execute will be combined with Close. Closing activities may include sending timesheets to Human Resources; returning unused or defective materials; sending 'As Built' information to Design/Engineering; sending vendor's invoices to Account Payable performing billing and other financial close steps.

Analyze: This process is unique and addresses the need for the establishment of business metrics within each work type. This process also defines the need for a common approach in the development and reporting of metrics. Furthermore, it emphasizes the need for a centralized, robust data structure that allows for the proper reporting of information in order to support tracking to the metrics.

3.2. Organizational Scope

The scope of the Design is broad and includes the Transmission, Distribution and Generation areas. The primary groups affected by the scope of PSW include:

- Generation
    - Operations
- T&D
    - Field Operations
    - Field Services
    - Customer Projects and Design
    - Resource Allocation

Other key groups affected by the scope of PSW include:

- Generation
    - Generation Engineering Maintenance (GEMS)
    - Dam Safety
    - Environment
    - Finance
- T&D
    - Engineering
    - Asset Investment Management
    - Finance & Supply Chain
    - Safety Health and Environment
- Customer Care

The Design phase will define the re-engineered processes and determine the organizational impact of those process changes.

3.3. SAP Functional Scope

SAP Enterprise Asset Management (EAM) is the SAP functional scope included in the design. While the business processes will drive the resulting solution, the primary SAP functional module expected to be included is Plant Maintenance (PM) and/or Customer Service. This functionality will be used to initiate, plan, design, schedule, dispatch, execute, close and analyze work orders in SAP. It is expected that SAP functionality around notifications, work orders, functional locations, equipment records, work centers, maintenance strategies/plans, task lists, compatible units and other work order related functionality will be used to support the business requirements.

As SAP is an integrated solution, other modules the project expects to significantly integrate to are Finance (FI), Controlling (CO), Project Systems (PS), Customer Care,

Materials Management (MM), Human Resources (HR) and Environmental Health and Safety (EHS). The extent of the integration (process and technical) will be defined during the Detailed Design and Functional Specification Phase.

A detailed outline of the functional areas of SAP expected to be utilized as part of the PSW project including their intended use is included in Appendix A.

3.3.1. SAP Functional Solution Overlaps

Due to the broad nature of the PSW processes, there are critical process overlaps and touch points with other initiatives in BCH. These can be categorized as:

- Overlaps with existing SAP footprints
- Overlaps with new SAP initiatives
- Overlaps with non-SAP initiatives

3.3.1.1. Overlap with existing SAP Footprints (FSR, PPM, CCS)

There is process overlap between PSW and existing SAP footprints for Finance (FSR), Projects (PPM) and Customer Care (CCS).

Financial Systems Replacement (FSR)

Financial and costing processes are currently live in SAP. The FSR footprint includes some key touch points with PSW including:

- Cost reporting by dimensions such as:
    - Location and cost center
    - Accounting category (capital, operating, maintenance, deferred)
    - British Columbia Utilities categories (e.g. capital, operating and maintenance costs categorized by major asset categories such as overhead lines, underground lines, hydraulic electric plant)
    - Work type (e.g. corrective versus preventive maintenance)
- Non-PPM Projects. These are simpler project structures that are used for recurring capital and non-PPM specific capital projects. They are also used by groups for managing expense projects.
- Labour cost allocations to work (projects and work orders)
- Application of overheads and interest during construction to capital work
- Capitalization of costs collected in projects and work orders to the appropriate individual fixed asset or mass asset (e.g. poles)
- Billing to third parties of costs such as contribution in aid, contribution in kind, damage to plant, joint use and work performed for third parties.

The PSW design will need to integrate closely with the financial design to ensure that processes are designed that simplify and streamline the creation and costing of work orders including final accounting treatment and reporting of capital, operating and maintenance costs.

Project and Portfolio Management (PPM)

Wave 1 of the PPM initiative is currently live in SAP and Primavera production and Wave 2 is scheduled for go-live in June of 2011. To date the PPM scope has covered large Engineering managed projects. This has applied primarily to large Generation and Transmission Engineering projects. There has been limited involvement of Distribution projects and most of these are covered under the FSR processes for projects. One of the design decisions for PSW will be to determine to what extent the SAP projects functionality is leveraged to enable the PSW processes and whether PSW will employ the FSR, PPM or some blended version of Projects functionality and processes.

One of the primary overlaps between PSW and PPM is the use of common resource pools to perform work. The PSW design team will need to work with PPM to determine:

- how work performed by PSW resources on PPM projects is represented in the system (for example as PSW work orders assigned to PPM projects or as PPM network activities)
- how work performed by PSW resources on PPM projects is scheduled (for example via PPM scheduling tool Primavera or via a PSW scheduling tool)
- how resources are represented in the system (called work centers in SAP) so that they can be planned on PPM projects and PSW work orders in a manner that addresses the requirements of both projects

PSW and PPM will also need to align on processes and procedures to update equipment and asset records in the various systems when capital work is performed.

Customer Care

With the implementation of PSW, customer care processes will be better integrated with work management processes. To streamline the customer care initiated work management processes and integrate them into an overall design for work management, PSW will change the way that Customer Care service requests are currently captured in SAP. For example: service notifications versus service orders may be utilized to capture requests for: new connections, outages, alterations, disconnects/re-connects, investigations, meter replacements and miscellaneous requests. Once validated, these requests may be transformed into a SAP work order. This same order could be used to track the costs of a request and perform any required billing. The PSW design changes will strive to greatly streamline the current day practice where a single request may have a service order in SAP Customer Care, a duplicate work order in Passport and an Internal Order in SAP Finance. Proposed changes would enable the reporting of costs versus revenues and recoveries for work performed. PSW will also increase the visibility and reporting of customer care generated work.

3.3.1.2.Overlap with other SAP Initiatives (SMI and Empower)

There is process overlap with other major initiatives, namely Smart Metering (SMI) and EMPower (Human Resources).

Smart Metering (SMI) and Smart Grid Programs

The first part of the program is focused on installing smart meters. Through the Smart Metering Initiative (SMI), BC Hydro will be installing new digital meters that support two-way communications capability to approximately 1.8 million BC Hydro customers throughout the province.

As a result the SMI initiative will be raising millions of work requests to perform the meter exchanges and SAP work management functionality will be utilized to facilitate the execution of this work. In addition, SMI work will require several thousand Passport work orders for communications and other work being done by BCH crews and contractors. The PSW project must participate fully in the design of the SAP solution for tracking this work in the system. The PSW project is the owner of work management configuration in SAP and will likely perform the configuration tasks related to work request on behalf of SMI. At the very least, PSW needs to closely supervise the system set-up.

Although the majority of the SMI meter exchanges are expected to be performed by a deployment vendor, approximately 100,000 meters are expected to be handled by BCH crews. These include the more complex meter exchanges (access, transformer rated) and replacements of failures. While who (SMI or Field Operations) and how these crews will be managed remains unclear, the long-term management of meter exchanges will be performed by BCH. For this reason it is critical that the system design meets the needs of BCH's requirements for work management long-term so that after the deployment vendor is done the system design works for BCH.

The Smart Grid Program is being contemplated and is not yet approved but if it does proceed will have a impact on the PSW processes.

EMPower

The EMPower project involves the migration of human resources, time, payroll and benefits processes from PeopleSoft to SAP. The project may also involve the replacement of existing safety incident logging capabilities in PeopleSoft.

The overlap process overlaps between EMPower and PSW primarily lie within the time capture area. PSW processes and front-end user tools need to simplify and streamline the time confirmation processes in the field.

The PSW project has a requirement to have visibility to key employee skills sets in order to safely schedule and dispatch work. This requirement is shared with the DMS project. Although a third party tool may be used to schedule and dispatch work orders, it is assumed that the employee skills data would be housed in the SAP HR module. The current scope of the Empower project is to only reflect employee skills (called Qualifications in SAP) in the system for evaluating potential new recruits. The PSW project will need to work closely with Empower to include qualifications for existing employees and potentially contractors in SAP.

3.3.1.3.Overlap with other Non-SAP Initiatives (DMS)

Distribution Management System (DMS)

It is expected that there will be significant process dependencies between PSW and DMS. Key areas of integration include: outage requests, permits, clearances and switching orders. The two projects will need to integrate both processes and technical solutions to ensure that the end-to-end business processes work.

In all cases where overlap exists, the PSW Project is working closely with the other initiatives to help define and understand scope boundaries, and where needed, help ensure a mutual solution is designed and delivered.

Further, it is expected that process rigor will be designed into and enforced by the technology tools wherever possible (e.g., electronic workflows and data validation). Finally, the Process design scope also includes governance and sustainment processes

3.4. Interface Scope

A number of interfaces have been identified to support the PSW project. The detailed list of currently identified interfaces can be found in Appendix B and is based on the following assumptions:

- Equipment
    - Meter equipment records will continue to be updated by Customer Care processes directly in SAP and interfaced to the GIS
    - Equipment records that currently exist in Passport for Generation and T&D Substations will be migrated to SAP
    - Equipment records that currently exist in STARR for Transmission Lines will be migrated to SAP.
    - PowerGrid will manually update the GIS with geospatial data for Transmission Lines equipment (no interface).
    - Distribution Design system (e.g. DAD) will directly update the Enterprise GIS system for Distribution Lines equipment
    - Distribution Line equipment will be interfaced to SAP from the Enterprise GIS
    - GIS systems will be used to spatially display equipment and work
- Work Orders
    - Work orders will be generated in SAP and will reference SAP equipment records
    - All work on Generation, Transmission and Distribution assets will be represented in SAP
    - Preventive maintenance plans that currently exist in Passport and trigger work order creation for Generation and T&D Substations will be migrated

to SAP

- Preventive maintenance plans that currently exist in STARR and trigger work order creation for Transmission Lines will be migrated to SAP
- Preventive maintenance plans that currently exist in SAM and trigger work order creation for Distribution Lines will be migrated to SAP
- 3rd Party tool(s) will likely be used to schedule and dispatch work to field crews

3.5. Data Cleansing and Conversion Scope

Proper data cleansing and data conversion are critical elements to the success of the PSW project. Significant business ownership and involvement will be required to perform the data cleansing and conversion activities. A separate Project Stream for Data Cleansing under the PSW program has been identified to ensure proper attention and significance is given to this activity. Some key areas of data have been identified as requiring significant data cleansing. Data cleansing activities for the items below should commence immediately so that PSW has the greatest chance for success:

- Supply Chain Data Cleansing Items
  - Catalogue id's (duplicates, obsolete etc.) – *Note: there is currently a Catalogue Governance Project in T&D BIS that is cleaning up the catalogue.*
  - Open Materials and Contract Requests (old requests that are no longer required and have never been closed need to be closed and excluded from conversion)
  - Open Purchase Orders (old PO's that are no longer required and have never been closed need to be closed and excluded from conversion)
  - Open Contracts (old contracts that are no longer required and have never been closed need to be closed and excluded from conversion)
  - Inventory counts and write-offs
  - Vendor cleansing (elimination of duplicates)
  - Outstanding Invoices and un-cleared invoices
- Work Order Items
  - Open Passport work orders that are obsolete and should be closed
  - Passport standing or collector work orders that should not be converted
  - Open SAM work orders that are obsolete and should be closed
  - Open STARR work orders that are obsolete and should be closed
  - Open Gateway requests
  - PowerOn work orders

- Equipment Records
    - Passport Equipment records and hierarchies for Generation and T&D Stations
    - STARR Equipment records for Transmission Lines
    - GIS Equipment records for Distribution (any cleansing or updates required)
    - SAP Meter Equipment Records (Devices)
- CUGS and Compatible Units
    - Consolidation of CUGS and CU's
    - Updating of labour estimates
    - Updating of material components
- SAP Customer Care
    - Work orders (close technically complete (TECO) work orders
    - Convert "not-started" work orders to notifications
    - Update open work orders that are in progress to have correct master data
    - Work centers
    - Meter (Device Records) – clean-up location, work center and other data
    - Address clean-up

A data cleansing strategy document and plan will be developed early in the detailed design and build phase of the project.

The data conversion strategy will be to convert only active open work orders, equipment, materials, BOM's, compatible units and supply chain documents. Equipment history will only be converted if it is required to trigger inspections or preventive and condition based maintenance. A detailed list of master and transactional data conversions in scope for the project is included in Appendix C.

3.6. Reporting Scope

The PSW project will utilize the reporting functionality in SAP to deliver the information identified as part of the work management process business requirements. The SAP Business Intelligence tool, which combines a back-end Business Warehouse (BW) for extracting, transforming and loading data with presentation tools such as Business Objects/Business Explorer for presenting the data in reports, graphs and dashboards, will be the primary reporting solution for PSW.

Based on the business requirements, the BI tool may also be used to report on data from non-SAP systems such as procurement data from Passport and Equipment data

from GIS and/or other systems. It is expected that the SAP reporting tool will replace existing reports in current day tools such as the Passport Data Warehouse (PDW). During the implementation phase reports currently being delivered from other tools such as Steadystate and SPOT will also be evaluated for replacement.

Reporting functionality will also be used in the transactional SAP system for real-time reporting requirements.

3.7. Other Miscellaneous Scope

PSW will develop the necessary front-end tools that will facilitate the initiation, execution and close of work. Portal and mobility technology will be used to support the PSW solution. These platforms will be leveraged to deliver tailored portals, enable work dispatching, execution and close processes and system supported enhancements which enable and simplify the PSW processes. Though a mobile platform, field crews can access mobile transactions in either online or offline mode, using the same data model. When in the office, logged onto a BC Hydro workstation, same mobile transactions will be made available to the field crews through the SAP Enterprise Portal.

Core modifications of SAP standard code will be discouraged and will require sign-off and approval by the PSW Steering Committee. A listing of potential enhancements over and above the portals and mobility functionality can be found in Appendix D.

3.8. Not in Scope

The following areas are not in scope for the PSW project:

3.8.1. Supply Chain Management

Implementation of the supply chain processes, including procurement and inventory management processes, are not in the scope of PSW. A separate Project will be run in conjunction with PSW to implement Supply Chain in SAP.

3.8.2. Asset Management

Strategic asset management processes and analysis is not in the scope of PSW. PSW will represent the outputs of the strategic asset management process in SAP to enable the auto generation of work orders and to support the PSW processes for initiating and planning work. More specifically:

- the processes and analysis tools used to assess, study and define plans and programs to maintain and manage T, D and G assets are not in scope. For example, the analysis to determine a preventive maintenance (PM) program for an asset is not in the scope of PSW.
- the output of Asset Management planning will serve as the input to work management processes. In the example above, the PM plan would initiate the work by automatically creating work orders based on the plan parameters (monthly,

running hours). That work for that asset can then be viewed, planned and scheduled in concert with other work required for that asset, area or circuit.

- the output of the work management process (close and analysis) will serve as inputs and updates to Asset Management planning processes and data to support further strategic planning.
- the data required by Asset Management and Work Management will be shared and in one central repository (system of record) in order to support asset and work visibility required by all groups and the single source of truth strategic tenant.

3.8.3. Other Areas Not in Scope

The following areas and not included in the current scope of PSW:

- Fleet Management. While equipment is considered a resource that will be planned and scheduled by the PSW solution, the work required to maintain the fleet is not in scope.
- IT and Properties. Requests for IT (IT support for example), or Properties (facilities related requests) are not in scope for PSW.

3.9. PSW Quick Wins Scope

Following is the scope of the PSW Meter Exchange Quick Win (MEQW) project **as of the scope freeze date of 1 October 2010**. Any scope changes after this date will be formally reviewed and included only if there is no impact to cost or schedule. All requested scope changes will be approved by the Project Manager.

Quick Wins Release 1 (Nov/Dec 2010)

- Revised WO structure within SAP to include:
  - Enhanced 'Status' profile capability. To enable enhance program and WO tracking and reporting.
  - Enhance 'Work Centre' data to display WO executing office location and crew.
- Enable 'Status' and 'Work Centre' to be user edited individually or in mass and used in various queries and reports.
- Enable electronic WO allocation (identification of the resource that will implement the WO) by central or local WO task manager.
- Enhance WO printing when required to enable:
  - Centralized printing by the program authority or central task managers.
  - Remote printing by the central program authority, central task manager or local task manager.
  - Local printing.
- Enable electronic WO status updates indicating 'field complete' by:
  - Contractor workforce via dedicated contractor portal.
  - BCH administrative personnel via SAP portal.

  - A meter exchange interface when ABS-BC/ELAN performs a meter exchange (current process)
- Support existing mass WO completions and meter exchange data updates via ABS-BC (current process).
- Enhanced reporting:
  - Enhanced printed work order (adding last meter read and meter location)
  - WO status.
  - Program status.
  - Exception reporting of past due and upcoming WO completions to help in monitoring deadlines and WO completion compliance.

Note: For clarity – In Release 1 meter exchange data will continue to be input to SAP as per the existing processes as ABS-BC Billing cannot accommodate electronic updates until Release 2.

4. CONSTRAINTS AND DEPENDENCIES

This section outlines the key external constraints and dependencies that may impact this project and its ability to be completed successfully. Each item represents a risk to the project, and will be tracked and managed through the project Risk Management Plan.

4.1. Constraints

Because the scope of the project does not include making changes to the existing legacy systems that will interface to SAP (most notably Supply Chain functions in PassPort), it is quite likely the solution design will be constrained by the current legacy system designs. As specific items are identified where this is the case, they will be managed as issues and escalated to the Steering Committee.

The Project Management practices for the project will need to align with the IT Development Standard Process (IT DSP).

The Change Management practices for the project will need to align with the standard Enterprise-wide Change Management Network practices.

4.2. Project Dependencies / Related Initiatives

As noted in the process scope section of the document there are dependencies and scope overlaps with the following key areas/initiatives that the PSW project will need to closely integrate with:

- SAP Supply Chain Implementation
- Finance processes in SAP
- Customer Care processes in SAP
- Project Management processes in SAP (from both the FSR and PPM areas)
- Smart Metering initiative in SAP

- Empower implementation of HR functionality in SAP
- Distribution Management System (DMS) project (non-SAP)

5. PROJECT APPROACH

5.1. Overall Approach

Key points:

- Design at an enterprise level, implement in smaller chunks as agreed to by the business groups
- Implementation will use SAP's ASAP methodology and standard ITDSP methodology.
- Design phase approach
    - Process first. Workshops (focus groups), validation, approval
    - As-Is technology and application architecture
    - Determine business and functional requirements

5.2. High Level Schedule

The targeted project milestones are as follows:

Milestone		
Business Process Workshops Start		
Business Processes Workshops Compete		
Change management Strategy Drafted		
Meter Exchange Quick Win Implemented		
BP Documentation Drafted		
Business Requirements Drafted		
BP Validation Complete		
BP Approval		
High Level Business Case Updated		
Detailed Business Case Updated		
Implementation Recommendations		
Key and Strategic Decisions		

5.3. Deliverables for the Design Phase

The deliverables for this Design phase include:

- Business Process Documents (BPD's),

- Business Requirements Matrices,
- Key Decision Documents (KDD's),
- Initial Phase Business Case
- Implementation Plan and Project Charter
- Detailed Business Case aligned with the Implementation Plan (end of Phase)
- Change Management Strategy
- Change Management and Communications Plans
- Meter Exchange Quick Win Implementation

5.4. Change Management

Organizational change management is the process of proactively enabling people to make the behavioural and attitudinal shifts required for the desired business outcomes of a particular change to be achieved and sustained over time. Change management best practice research consistently identifies a number of critical success factors for introducing, implementing and sustaining change:

1. Sponsorship and leadership accountability
2. Urgent and clear vision and outcomes
3. Stakeholder involvement/engagement
4. Effective communication
5. Effective skill and knowledge development
6. Systematic, integrated planning
7. Enterprise-wide approach
8. Organizational alignment, reinforcement and sustainment

The PSW Project Change Management Strategy describes these critical success factors in detail and outlines a high level strategy for how BC Hydro can incorporate these critical success factors into the PSW project.

Each phase of the overall project will require a different change management focus which in turn will require different tactics for each of the critical success factors described in the Change Management Strategy. At this point, the project is early in the Design phase (developing detailed business processes). The following table provides a high level description of the project and change management focus within each of the key project phases moving forward.

Phase	Project Focus	Change Management Focus
Design	• Design detailed business processes • Identify system and people impacts	Leverage project leadership (Steering Committee and BAT) to create the awareness, commitment and understanding required to lead the change amongst the management ranks of impacted front-line stakeholders.

Phase	Project Focus	Change Management Focus
	• Determine implementation approach	• Establish project leadership • Ensure consistency of vision amongst leadership and prepare senior leaders to drive the change • Cascade sponsorship for project to management ranks of front-line stakeholders
Build	• Develop detailed system design • Configure system • Develop required customizations and interfaces • Test system	Leverage project and broader leadership groups to build readiness amongst front-line impacted stakeholders. • Communicate to impacted stakeholders • Train impacted stakeholders • Identify and address performance management requirements (e.g. changes to PSPs, establish adoption measurement plan etc.)
Implement	• Go live with business processes and associated systems	Implement changes, conduct regular assessments of the degree of adoption and reinforce the changes with stakeholders • Provide end user support
Sustain	• Ensure sustainment organization is in place • Close project	Ensure that all of the supporting organizational factors are in place and have stabilized to ensure the long-term sustainment of the changes.

6. PROJECT ORGANIZATION AND GOVERNANCE

The following section outlines the project structure, roles and responsibilities with regard to how the project will be governed and how key decisions will be made and approved. As outlined in the figure in section 6.1 Team Structure, the Project Organization has five overall bodies: Sponsorship and Steering Committee, Project Management Team, Core Project Team, Subject Matter Experts, and Business Advisory Team. The general role of each with regard to governance and decision making is outlined in the following table, and the description of individual roles and responsibilities is outlined in section 6.2 Team Organization and Responsibilities.

Project Body	Governance / Decision Making Role
Sponsorship and Steering Committee	• Provides the mandate to the Project Management Team to deliver the project per the items defined in this charter • Ensures the appropriate Project Governance procedures and practices are in place and are followed through-out the project • Receives periodic updates from the Project Manager on the progress and status of the project • Receives periodic updates from the Quality Assurance Lead as to the effectiveness of project management, governance, and quality assurance activities • Makes changes as necessary to the project governance structure to best ensure the successful outcome of the project • Supports the effective execution of the project by empowering the Core Project Team to make design decisions • Review “key” decisions, and approve design decisions involving organizational changes, submitted by the Core Project Team • Makes design decisions where the Core Project Team is unable to do so or where the feedback from the Business Advisory Team is in conflict with decisions made by the Core Project Team. • The Steering Committee will meet at a minimum monthly, and more frequently at the request of the Project Manager or the Steering Committee • The Steering Committee will determine the need and timing of any necessary internal or external authorizations (for example, from the ET, the BC Hydro Board of Directors, or

Project Body	Governance / Decision Making Role
	the BC Utilities Commission). The Project Manager will coordinate the delivery of any information required by the Steering Committee to fulfill this responsibility. The Project Team will proceed on the assumption that any necessary approvals / authorizations are in place unless otherwise advised by the Steering Committee.
Project Management Team	• Receives the mandate from the Project Sponsor and Steering Committee to deliver the project per the items defined in this charter • Is empowered to develop and execute the required project management plans. Detailed Project Management Plans are available for review by the Steering Committee upon request. • Provides work assignments to the Core Project Team, and monitors the progress of these assignments • Provides periodic updates to the Steering Committee
Core Project Team	• Is empowered to make design decisions necessary to develop and implement the most appropriate solution per the objectives, scope, and guidelines defined in this charter. "Key" design decisions will be reported to the Steering Committee for review. Design decisions involving organizational changes will be submitted to the Steering Committee for approval. • Wherever possible, the Core Project Team members will be assigned full-time to the project. Where members are not full time, this will be managed as a project risk.
Subject Matter Experts	• The Subject Matter Experts (SME's) provide input and take part in design discussions and decisions, but do not have a specific role to play in the governance of the project.
Business Advisory Team	• The Business Advisory Team represents the end users of the solution and is used to help assess the impact the solution will have on the business. • The Business Advisory team does not have any decision making authority on the project. • Feedback on the design and the solution will be gathered from the Business Advisory Team through workshops facilitated by the Core Project Team. The output from

Project Body	Governance / Decision Making Role
	these workshops will be reviewed with the Steering Committee. Items where the feedback from the Business Advisory Team is in conflict with the design decisions made by the Core Project Team will be submitted to the Steering Committee for decision.

6.1. Team Structure

Click here to see the project organization chart.

6.2. Team Organization and Responsibilities

The roles and responsibilities for the project are summarized in the following table:

Project Body	Project Role	Governance / Decision Making Role
Steering Committee	Steering Committee	• Provides the mandate to the Project Management Team to deliver the project per the items defined in this charter • Ensures the appropriate Project Governance procedures and practices are in place and are followed through-out the project • Receives periodic updates from the Project Manager on the progress and status of the project • Makes changes as necessary to the project governance structure to best ensure the successful outcome of the project • Review "key" decisions, and approve design decisions involving organizational changes, submitted by the Core Project Team, in a timely manner as to minimally impact overall project schedule; • Makes design decisions where needed by the Core Project team, where the Core Project Team is unable to do so, or where the feedback from the Business Advisory Team is in conflict with decisions made by the Core Project Team; • Steering Committee team members themselves will make every effort to attend the Steering Committee meetings; • The Steering Committee will meet at a minimum monthly, and more frequently at the request of the Project Manager or the Steering Committee; • The Steering Committee will determine the need and timing of any necessary internal or external authorizations (for example, from the ET, the BC Hydro Board of Directors, or the BC Utilities Commission). The Project Manager will coordinate the delivery of any information required by the Steering Committee to fulfill this responsibility. The Project Team will proceed on the assumption that any necessary approvals / authorizations are in place unless otherwise advised by the Steering Committee.

Project Body	Project Role	Governance / Decision Making Role
Project Management Team	Project Manager	• Receives the mandate from the Project Sponsor and Steering Committee to deliver the project per the items defined in this charter; • Is empowered to develop and execute the required project management plans. Detailed Project Management Plans are available for review by the Steering Committee upon request; • Provides work assignments to the Core Project Team, and monitors the progress of these assignments; • Provides periodic updates to the Steering Committee; • Is empowered to make design decisions necessary to develop and implement the most appropriate solution per the objectives, scope, and guidelines defined in this charter. "Key" design decisions (including Strategic Design Decisions) will be reported to the Steering Committee for review. Design decisions involving organizational changes will be submitted to the Steering Committee for approval; • Wherever possible, the Core Project Team members will be assigned full-time to the project. Where members are not full time, this will be managed as a project risk. • Required to commit 100% (of full-time hours) to the Project, and be accessible to the Project Team during all business hours, and otherwise within 24 hours. [Reasonable allowance to be made for pre-scheduled time off as approved by the Steering Committee] • Accountable for acceptable completion of the Project plan tasks on time, in scope and on budget. • Ensures coordination and integration of project deliverables and timelines with related initiatives identified in the Project Charter or, otherwise, as identified by the Steering Committee. • Develops all project plans and manages the overall project delivery, and achievement of targeted project performance metrics. • Responsible for escalation and coordination of issues to ensure timely resolution. • Maintains issues log, reports on project risks, and ensures mitigation plans are developed and

Project Body	Project Role	Governance / Decision Making Role
		implemented on a timely basis. • Works closely with the SAP Enterprise Lead to ensure the Project approach and methodology aligns with BC Hydro standards and is reusable on other later SAP implementation projects. • Works closely with the Quality Assurance Lead to ensure the Project Quality Management Plan aligns with BC Hydro standards and is integrated with the overall project delivery. • Supports change management and communications.
Business Advisory Team	•	• The Business Advisory Team represents the end users of the solution are used to help assess the impact the solution will have on the business; • The Business Advisory team does not have any decision making authority on the project; • Feedback on the design and the solution will be gathered from the Business Advisory Team through workshops and meetings facilitated by the Core Project Team. The output from these sessions will be reviewed with the Steering Committee. Items where the feedback from the Business Advisory Team is in conflict with the design decisions made by the Core Project Team will be submitted to the Steering Committee for decision.
Subject Matter Experts	•	• The Subject Matter Experts (SME's) provide input and take part in design discussions and decisions, but do not have a specific role to play in the governance of the project.

Project Management Team	**SAP Enterprise Lead**	• Owns BC Hydro accountability for acceptable completion of the Project plan tasks on time, in scope and on budget. • Supports and enables the Project Manager in delivery of the project management responsibilities as defined above. • Works with the Project Manager to ensure project management plans align with BC Hydro standards and that methodology components are reusable on future SAP projects. • Approves and ensures delivery of target SAP implementation architecture and alignment with BC Hydro IT&T Strategy (i.e. accountable for overall evolution of SAP landscape at BC Hydro including changes introduced by this project). • Delivers SAP sustainment strategy to enable successful production turnover and ongoing support for the defined processes. • Ensures alignment of this project with other enterprise SAP program initiatives. • Resolves and/or mitigate issues which may potentially arise from scoping, timing, or resourcing conflicts related to other SAP initiatives. • Responsible for overall procurement and management of SAP project resources and associated financial commitments. • Supports change management and communications.
Project Management Team	**Quality Assurance Lead**	• Develops the project Quality Management Plan and manages its execution. • Coordinates any external resources defined in the Quality Management Plan. This may include KPMG in its role of auditor, SAP Canada, or other specialists. • Works with the Project Manager to ensure the overall project methodology contains appropriate quality assurance deliverables and activities. • Reports periodically to the Steering Committee on the execution of the project against the Quality Management Plan. • Makes recommendations to the Steering Committee with regard to changes to the project governance structure.
Core Project Team	**Business Lead**	• Provides oversight to ensure that business process and system design meets operational requirements and is consistent with project objectives and principles.

		• Receives and provides input to related projects to ensure consistency / alignment of process designs. • Determines which design decisions are to be categorized and managed as "key" design decisions. • Approves process designs. • Provides or identifies subject matter expertise as required. • Supports change management and communications.
Core Project Team	**Core Project Team Members**	• The Core Project Team members are the primary working group and are comprised of individuals assigned either full time or near full time to the project. • The team is empowered to develop and implement the best solution design based upon the scope, objectives and guidelines in this charter, and taking into account the input from the business and the capabilities of SAP. • The team has responsibility for day to day delivery and outcomes of the project.
Subject Matter Experts	**Subject Matter Experts (SMEs)**	• Provide information and requirements on behalf of the business, and work with the core design teams to assess solution alternatives and develop future state designs. During the Blueprint Phase of the project, SMEs are expected to provide details and to help clarify the current business processes, including: applicable business rules, current applications, and governing policies and standards. It is also expected that SMEs will likely have to consult with others in their business areas in collecting details and clarifying requirements. The SMEs' primary interaction with the core project team will be through design workshops which will be organized and facilitated by the core team members. • In the Realization Phase of the project, as the "To Be" designs are completed, the SMEs will be involved in assessing how the new processes will impact the business and will assist in developing change management strategies for successfully implementing the solution. SMEs may also be used in the delivery of some project communications. • Later in the Realization Phase, the SMEs will also become involved with testing the solution and may be involved in reviewing training material and end user documentation for completeness and accuracy. • The Subject Matter Experts (SME's) provide input and take part in design discussions and decisions, but do not have a specific role to play in the governance of the project.
Subject	**Other**	• BC Hydro may retain additional external advisors and subject matter experts to ensure the project has the comprehensive

Matter Experts	**External Advisors**	expertise needed to deliver high quality and authoritative project outcomes. • These external advisors will be managed by and report to BC Hydro via the Project Manager. • It is the intent of BC Hydro to include such advisors within the overall project team to foster open and informed discussions amongst team members, with a view to optimizing the target system design consistent with the objectives and principles established in this Charter. • These advisors may attend workshops, produce deliverables, participate in team meetings, etc. as directed by the Project Manager.

7. PROJECT MANAGEMENT

The Project Manager is accountable for the development, execution, and monitoring of the project management plans in keeping with the governance structure outlined in this charter. The following required elements will be included within the appropriate management plan.

7.1. Progress Reporting

- Progress will be formally reported via status reports to coincide with monthly steering committee meeting schedule. A single status report format will be used for steering committee status, as well as Field Operations and OCIO PMO status reporting requirements.

7.2. Scope Control

- Project scope will be controlled via the project manager through an escalation process to the Steering Committee.
- Proposals to amend the project scope will be documented by the project manager and tabled for review and approval by the Steering Committee.

7.3. Issue Management

- The project manager will arrange for a formal issue log of project issues to be maintained.
- High priority open issues will also be reflected on current status reports to ensure visibility to the Steering Committee.

7.4. Risk Management

- The project manager will arrange for a formal project risk register to be developed and maintained.
- This will be done in coordination with BC Hydro's risk management group to ensure a consistent and rigorous approach to risk.
- Key risks (high impact and/or high probability) will also be reflected on current status reports to ensure visibility to the Steering Committee.

7.5. Quality Assurance

- The Quality Assurance Lead is responsible for the development, execution, and monitoring of the Quality Assurance Plan.
- The Quality Assurance Lead will provide periodic updates to the Steering Committee, as outlined in the QA Plan.
- The OCIO IT QA role will interface to the project through this role and will have the ability to escalate issues independently to the steering committee, if needed.

7.6. Project Management Tools

- The project will use a combination of Microsoft-based tools to help manage the project as the Project Manager sees fit, including MS Project for schedule and milestones, MS Excel for cost and resource planning and MS Excel for status reporting.
- A project Sharepoint site will be established and used to store and maintain key project management artefacts outlined above. Sharepoint will also be used as the primary vehicle for Issue and Risk Management.

8. BUDGET

The budget for this phase is expected to be $4,500,000.

9. BENEFITS REALIZATION

The cost-benefit analysis and NPV summarized below are based on the initial financial analysis. Based on discussions with the business groups, the following were identified benefits realization areas:

Areas Identified for Financial Benefit Realization

Benefit Area	Main Driver	Low	High
Designers	Reduced Labour costs on administrative work and project management	10.0%	15.0%
Inspector	Reduced Labour costs on administrative work and project management	5.0%	10.0%
Designer Support - DA/AA	Reduced Labour costs on administration	4.0%	6.0%
ESCC	Efficiency gain on work Initiation	1.8%	4.5%

Distribution Line Crew	Reduced Travelling Time resulting from long range work planning. Improved on-tool time	2.1%	3.5%
Line Contractor	Improved connection between costs and resource allocation and better work bundling	3.8%	7.5%
Line Clerical/FSA	Reduced Labour Costs on Time Entry, Contract Admin, Job closing and scheduling	5.5%	8.3%
Management	Improved work planning and management.	1.4%	3.5%

PSW is projected to generate peak annual ongoing benefits (in $000s) of $10,453 ± 30%. It is projected to generate peak annual ongoing incremental costs of $3,679 ± 30%.

Intangible benefits (in addition to the tangible benefits noted above) are also expected, and include in part:

- Enhanced safety by leveraging technology to reduce administrative work, allowing more time spent in the field for oversight, coaching and mentoring crews;
- Documented and 'institutionalized' processes to aid in knowledge transfer for new hires;
- Standardized policies and processes;
- Single source of truth, enabling quicker and more 'trustworthy' reporting & metrics to reinforce accountability.

10. APPENDIXES

10.1. Appendix A-Functional Scope

Module(s)	Functional Area	Functionality
EAM	Technical Objects	Includes items such as Functional Locations, Equipment and BOM's. Used to view, organize and report on work and equipment based on functional and/or location based views. Notifications and Work Orders may be assigned directly to Functional Locations or Equipment Records. BOM's can be used to further breakdown the components of equipment.
EAM	Processing	Notifications, Work Orders
EAM	Maintenance Strategies and Plans	Set up of Maintenance strategies and plans for auto generation of inspections and preventive/condition based maintenance orders.
EAM	Measurement Documents	To record equipments readings, conditions and test results.
EAM	Task Lists and Compatible Units	Used to provide standard "work lists" for repeatable processes. Includes labour, materials and equipment resources required to accomplish a task. Separate SAP functionality for compatible units that will be evaluated in the design phase to determine if it is required to fulfill BCH requirements or if standard task lists are sufficient.
HR	Qualifications	Required to assign proper resources to the work based on their HR qualifications
PS	Project Systems	Integration to Project Systems for Capital work.
CO	Controlling	Integration to Controlling for costing of labour, application of overhead, IDC and settlement of costs.

Module(s)	Functional Area	Functionality
Fixed Assets	Fixed Assets	Integration to Fixed assets for settlement of capital costs.

10.2. Appendix B-Interface Scope

The following interfaces from SAP to/from external legacy systems have been identified as being required by the PSW project:

Type	Description	Direction	Legacy System	Interface Change Type
Supply Chain	Approved Purchase Orders	Inbound	Passport	New
Supply Chain	Goods Receipt	Inbound	Passport	New
Supply Chain	Approved/Matched Passport Invoice documents	Inbound	Passport	Modify
Supply Chain	Material Master Maintenance (Create/Change) for catalogue id's	Inbound	Passport	New
Supply Chain	Purchase Requisitions for non-stock and services	Outbound	Passport	New
Supply Chain	Reservations for stock items	Outbound	Passport	New
Equipment	Distribution Line Assets	Inbound	Smallworld	New
Equipment	Transmission Line Assets	Inbound	Smallworld	New
Equipment and FLOC	Equipment and FLOC for Generation Assets	Outbound	eWPP	New
Equipment and FLOC	Equipment and FLOC for Generation Assets	Outbound	EHR	New
Equipment and FLOC	Equipment and FLOC for Generation Assets	Outbound	RCM Turbo	New
Measurement Documents	Measurement documents for Generation	Outbound	EHR	New
GIS	Geospatial representation of Assets		Smallworld	New
OMS	Trouble notifications	Inbound	PowerOn	New
	Control Center	Inbound	PowerOn	New

Type	Description	Direction	Legacy System	Interface Change Type
Advanced Scheduling Tool	Work Orders and Operations for Scheduling	Outbound	TBD	New
Advanced Scheduling Tool	Scheduled Work Orders	Inbound	TBD	New
Compatible Units	Compatible Units to be used in Design	Outbound	GIS-DAD	New
Work order cost/price calculation	CCC (custom configuration calculator)			Update
Joint Use		Inbound		Update

10.3. Appendix C- Conversion Scope

The following key data conversion items have been identified:

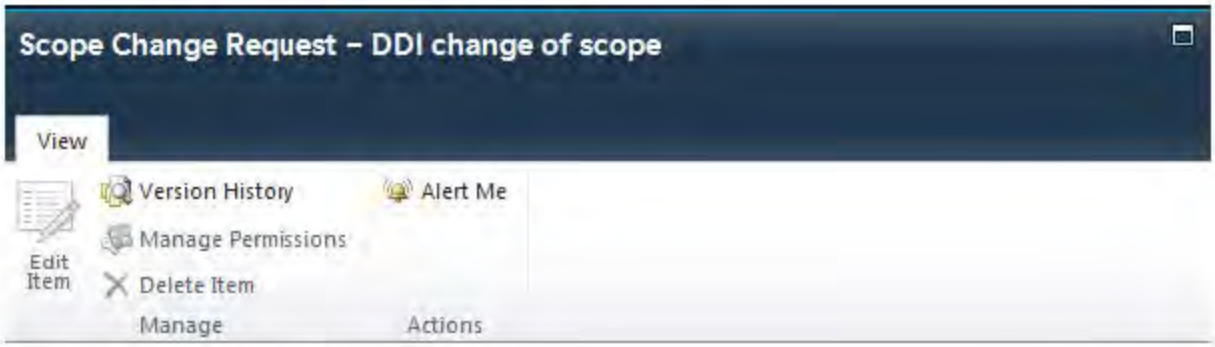
Source System	Data Conversion Item	Data Cleansing Requirements	Estimated Volumes
Passport	Open Work Orders	Close "old" work orders. Close standing and collector work orders.	Large volume for T&D. Smaller volume expected for Generation as they did some cleansing in advance of FSR Project.
SAM	Open Work Orders	Close "old" work orders.	tbd
STARR	Open Work Orders	Close "old" work orders.	tbd
Passport	Catalogue ID's	Remove duplicates. Remove obsolete.	tbd
Passport	Open Purchase Orders and Contracts	Close "old" Purchase orders	tbd
Passport	Open Material and Contract Requests	Close "old" Purchase orders	tbd
Passport	CUGS & Compatible Units	Updates to labour estimates and materials	tbd
Passport	Generation Equipment Records and Hierarchies		
Passport	Transmission/Distribution Sub-Stations Equipment Records and Hierarchies		
GIS	Distribution Lines Equipment	Complete missing or inaccurate information. "Inactivate" obsolete or out of service equipment.	
GIS	Transmission Lines Equipment	Complete missing or inaccurate information.	
Passport	Open Work Orders	Significant work effort required to close old work orders particularly in Distribution. Closure of current	

Source System	Data Conversion Item	Data Cleansing Requirements	Estimated Volumes
		"standing" or "collector" work orders.	
Passport	Preventive Maintenance Plans: Generation Assets		
Passport	Preventive Maintenance Plans: T&D Sub-Stations		
SAM	Preventive Maintenance Plans: Distribution Line Assets		
STARR	Equipment Records: Transmission Line Assets	Complete missing or inaccurate information.	
STARR	Preventive Maintenance Plans: Transmission Line Assets		
SAP	Closure of old CCS work orders in SAP		4 million
SAP	Migration of open work orders to notifications		
Excel	List of PSW work centers		Tbd
SAP	Updates to existing SAP data to use updated work centers (e.g. network activities, work orders)		tbd
TBD	Employee skills loaded as qualifications		tbd

10.4. Appendix D- Enhancement Scope

The following potential enhancement items have been identified:

Enhancement	Description	Reason Required
Population of Capital Settlement Rules for "Distribution" orders	Capital settlement rules to fixed assets and dismantlement are populated based on the compatible units.	This enhancement is required to replace the functionality currently delivered by the interface from the Passport M320 screen to SAP. Capital settlement rules to transfer costs from the work order to the monthly fixed asset for pooled assets (e.g. poles, cross arms etc.) are populated based on the estimated cost split from the CUG.
Population of work order with Compatible Unit information	Simplified design for populating the work order with the appropriate compatible unit data	The functionality provided by SAP for this area is not very user friendly. It is anticipated that an enhancement will be required to streamline and simplify this process.



Scope Change Request: DDI change of scope

Change Request Name	DDI change of scope
Request No.	CR1
Work Stream	
Description	Distribution Design Improvements: removng DDI stream from PSW scope.
Date Initiated	9/1/2011
Date Decision Required	11/9/2011
Initiated By	
Reason	With implementation of new T&D business model. the original DDI concept is not longer valid.
Priority	Medium
Risks & Impacts	No risk to project. Budget allocated to DDI will not be used. Is allocated as additional contingency.
Components Impacted	
Change Request Type	Scope
Change Classification	Other
Status	Change Accepted
Estimated Completion Date	
Actual Completion Date	11/9/2011
Proposed Solution	remove DDI from PSW Scope. Move original budget to contingency. Shown as negative value.
Comments	Approved at Nov 9 Steering Committee meeting
Approved Funding Available	
Emergency or One Time	
Total Estimated Hours	
Estimated Labour $	
Estimated Hardware $	
Estimated Other Costs $	
Estimated Total Costs $	($522,000.00)

Scope Change Request – Field Mobility Meter Exchange: Schedule

View

Edit Item

Version History
Manage Permissions
Delete Item
Alert Me

Manage Actions

Scope Change Request: Field Mobility Meter Exchange: Schedule

Change Request Name	Field Mobility Meter Exchange: Schedule
Request No.	CR2
Work Stream	
Description	As discussed in last week's Steering Committee meeting, the objectives of Field Mobility (FM) are to test the work dispatch and completion processes using technology, and get feedback for the broader mobility implementation. Remember that FM consists of two parts: ESOs (Nanaimo, 10 users) and Measurement Canada-driven Meter Exchanges (Richmond, 4 users).
Date Initiated	10/28/2011
Date Decision Required	11/22/2011
Initiated By	Steve Chung, Mgr Meter Shop
Reason	There are no routine Meter Exchanges (ESO-related or Measurement Canada-driven) being done in Richmond due to SMI 'unable to complete' work. Therefore, there is no volume for the Richmond pilot.
Priority	High
Risks & Impacts	Schedule only impact
Components Impacted	Field Mobility Stream
Change Request Type	Schedule
Change Classification	Other
Status	Request Initiated
Estimated Completion Date	
Actual Completion Date	
Proposed Solution	Option 1. Change the pilot location from Richmond to the North Island and combine with ESO pilot. The schedule changes from November to February (the originally scheduled ESO pilot).
Comments	Accepted by steering committee as of Nov 22, 2011.
Approved Funding Available	
Emergency or One Time	One Time
Total Estimated Hours	
Estimated Labour $	
Estimated Hardware $	
Estimated Other Costs $	
Estimated Total Costs $	$0.00

Scope Change Request – Field Mobility Meter Exchange: Scope

View

Edit Item | Version History | Manage Permissions | Delete Item | Alert Me

Manage | Actions

Scope Change Request: Field Mobility Meter Exchange: Scope

Change Request Name	Field Mobility Meter Exchange: Scope
Request No.	CR3
Work Stream	
Description	As discussed in last week's Steering Committee meeting, the objectives of Field Mobility (FM) are to test the work dispatch and completion processes using technology, and get feedback for the broader mobility implementation. Remember that FM consists of two parts: ESOs (Nanaimo, 10 users) and Measurement Canada-driven Meter Exchanges (Richmond, 4 users).
Date Initiated	10/28/2011
Date Decision Required	11/22/2011
Initiated By	Steve Chung
Reason	Steve Chung has asked that PSW modify our Meter Exchange application to help process the 'unable to completes' from SMI. Steve is currently using paper as the Clevest tool that is supposed to be used is not working.
Priority	High
Risks & Impacts	Schedule and cost impact.
Components Impacted	Field mobility stream
Change Request Type	Schedule; Cost
Change Classification	Other
Status	Request Initiated
Estimated Completion Date	
Actual Completion Date	
Proposed Solution	1. Not recommended as part of current PSW scope. 2. Investigate deploying a mobile solution for Meter Exchanges in early 2013 to replace the tool supplied by Clevest, whose contract expires December 2012. This solution would be ahead of the originally planned July or October go-lives for Distribution.
Comments	
Approved Funding Available	
Emergency or One Time	
Total Estimated Hours	
Estimated Hardware $	
Estimated Other Costs $	
Estimated Total Costs $	
Attachments	Field_Mobility_Scope_Recommendation_v1.doc

BC hydro

Statement of Objectives

Project Title:	Project and Portfolio Management Process and Tools		
Project Shortname:	PROSYSSU	**Project Manager:**	Barry Reimer

1 Project data

1.1 Standard References

Program Short Name:	PROSYSSU
Project Phase:	Identification
Authorization:	
Originating Organization:	EARG Project Delivery
Project Initiator:	Diane McSherry
Project Sponsor:	Chris O'Riley
Project Manager:	Barry Reimer

1.2 Statement of Objectives Revision History

Revision No.:	2
Initial issue date:	2008-07-29

1.3 Project Background

BCH corporately has recognized that current Project and Portfolio Management (PPM) processes and tools are not adequate for current and future project delivery requirements organization-wide.

2 Project Initiator's Statement of Summary Requirements

2.1 Statement(s) of the business problem or opportunity and the required response

Problem

- Current project and portfolio management processes and tools are insufficient to allow effective delivery of the growing BC Hydro capital program. In particular, inconsistent usage project controls, reporting, and document management processes and tools have the potential to introduce project risk for capital projects of all sizes.
- Project managers and their delegates spend too much time working with inefficient systems, creating manual reports, and moving documents through manual approval processes, time which is better spent focusing on project quality, value and safety.

Required Response

- Implementation of new Project and Portfolio Management processes and tools for BC Hydro corporately.

2.2 Safety, Security (Critical Infrastructure Protection) and Confidentiality Requirements

- n/a

2.3 Project Initiator's Interim Decision Requirements

The Project Initiator requires the following items, in addition to the above requirements, for this project phase. The list includes the Project Initiator's requirement for approval, acceptance, or permission to proceed for each item.

- n/a

3 Project Manager's Proposed Summary Objectives to Achieve Requirements

3.1 Scope Objectives

Project

- To identify and refine business processes to support BCH project and portfolio management across the organization
- To identify and implement new technologies, based on BCH Corporate IT Strategy, to enable the organization-wide project portfolio management processes
- To retire legacy applications where functionality has been replaced

Current Phase – Identification

- Identification phase scope will include the delivery of:
  - Project Charter
  - High level revision of the identification phase business case
  - Alternative definition and analysis of organizational impact
  - High level resource plan, schedule, and cost estimate for next project phase
  - Recommended solution footprint
- Reports showing project status.

3.2 Schedule Objectives

Current Phase - Identification

The target dates for milestone events for this phase are:

Date	Description
2008-07-07	**Phase 1 Initiation**
2008-07-25	**Draft Governance Structure and High Level Scope Definition**
2008-08-12	**Draft Project Charter**
2008-09-26	**Organizational Impact Assessment & High Level Current State Process Overview**

2008-09-19	**Draft Implementation Business Case**
2008-10-03	**High level resource plan, schedule, and cost estimate for next project phase**
2008-10-24	**Stage Gate Approval To Move to Phase 2**

3.3 Cost Objectives

Project

- The total Expected Cost for implementing the project is greater than $5M. The total Authorized Amount for the project is $0.

Current Phase – Identification

The target total cost for this phase of the project is $245,000.

4 Approvals

Barry Reimer is appointed Project Manager with authority and responsibility in accordance with the Project Management Policies and Procedures of BC Hydro, Generation Project Delivery and Engineering.

Initiator:	Diane McSherry, Director Project Delivery, EARG	Date
Sponsor:	Chris O'Riley, Senior Vice President, EARG	Date
Accepted by:	Barry Reimer, Project Manager	Date
Reviewed[1] by:		Date

[1] For compliance with PSDP and EARG standards.

BC hydro

Statement of Objectives

Project Title:	Project and Portfolio Management Process and Tools		
Project Shortname:	PROSYSSU	**Project Manager:**	Barry Reimer

1 Project data

1.1 Standard References

Program Short Name:	PROSYSSU
Project Phase:	Identification
Authorization:	
Originating Organization:	EARG Project Delivery
Project Initiator:	Diane McSherry
Project Sponsor:	Chris O'Riley
Project Manager:	Barry Reimer

1.2 Statement of Objectives Revision History

Revision No.:	3
Initial issue date:	2008-07-29

1.3 Project Background

BCH corporately has recognized that current Project and Portfolio Management (PPM) processes and tools are not adequate for current and future project delivery requirements organization-wide.

2 Project Initiator's Statement of Summary Requirements

2.1 Statement(s) of the business problem or opportunity and the required response

Problem

BCH corporately has recognized that improvements to current Project and Portfolio Management (PPM) processes, methodologies and tools are required to meet the growing volume of project delivery requirements organization-wide. Sustaining capital projects alone are forecast to increase from F2009 levels by nearly 80% over the next four years and a 'One Hydro' view of capital projects is needed for senior BCH management to effectively track progress, assess and manage risk. In order for that to happen, consistency in PPM processes, definitions and enabling technology is required across BCH.

High-level "As-Is" analysis conducted during PPM Phase 1 has confirmed that there is inconsistent usage of project methodology, processes, controls, reporting, document management processes, and tools which ultimately increases project risk for all projects.

Project managers and their delegates spend too much time working with inefficient and disparate legacy systems, creating manual reports, and manually moving documents through approval processes. Rollup of projects to the program or portfolio level with meaningful data is a complex challenge at best, and a 'real-time view' into projects, programs, or portfolios is not available.

The opportunity for the PPM initiative is to provide systems and processes that will support consistent reporting within and across the organization, provide useful forecast data and tools for project resource management, and show resource, data, and task dependencies between projects or programs. There are a growing number of disparate PPM related business transformation projects with supporting IT requirements being initiated across BCH and combining them into a single visible corporate initiative will ultimately reduce costs and drive efficiency and consistency in processes, tools and reporting.

Required Response

Implementation of new Project and Portfolio Management processes and tools for BC Hydro corporately, but initial implementation will be for EARG only.

2.2 Safety, Security (Critical Infrastructure Protection) and Confidentiality Requirements

- n/a

2.3 Project Initiator's Interim Decision Requirements

The Project Initiator requires the following items, in addition to the above requirements, for this project phase. The list includes the Project Initiator's requirement for approval, acceptance, or permission to proceed for each item.

- Signoff on high level preliminary design prior to Steering Committee approval
- Signoff on detailed design prior to Steering Committee approval
- Weekly status reports
- Weekly advisory team meetings

3 Project Manager's Proposed Summary Objectives to Achieve Requirements

3.1 Scope Objectives

Project

- Identify and refine foundational business processes so that standard and efficient PPM practices are enabled across the BC Hydro organization that will allow the effective delivery of the capital program at both a project and a program level.
- Align business process improvements to a business operating model that requires clear accountabilities and responsibilities

- Improve PPM reporting and scheduling so that resources are managed more efficiently and projects are advanced in a predictable, timely and cost efficient manner
- Identify and implement new technologies consistent with the BC Hydro IT&T strategy to enable the organization-wide project portfolio management processes.
- Retire legacy applications where functionality has been replaced by new technology

Current Phase – Solution Design

Solution design phase scope will include the delivery of:

- Project start-up for integrated vendor/BC Hydro implementation team
- Updated PPM "to-be" process flow diagrams (based on PSDP/PMSP)
- SAP Fit/Gap confirmation and updated solution architecture diagram
- Refined schedule of business requirements
- Detailed implementation and change management plan for EARG implementation Wave 1 & 2 and outline of post-implementation sustainment requirements
- Identification of potential organizational 'quick wins'
- Updated project charter, business case, budget and implementation schedule
- Stage Gate Approval from the Steering Committee to move to implementation.
- Reports showing project status.

3.2 Schedule Objectives

Current Phase - Identification

The target dates for milestone events for this phase are:

Date	Description
2009-02-23	**Phase 2 Initiation**
2009-04-01	**Updated project charter and solution footprint**
2009-04-12	**Initiator Signoff of High Level Design**
2009-04-30	**Organizational impact assessment complete**
2009-05-15	**Detailed resource plan, schedule, and cost estimate for next project phase**
2009-05-29	**Updated implementation business case ready for signature**
2009-05-29	**Detailed system design complete**
2009-06-01	**Stage gate approval to move to Phase 3**

3.3 Cost Objectives

Project

- The total Expected Cost for implementing the project is approximately $16.7M. The total Authorized Amount for the project to date is $245k.

Current Phase – Solution Design

The target total cost for this phase of the project is $3,977,000.

Item	Expected Cost ($k)	% of Total		High Case ($k) +50%	% of Total
SAP Implementation - Contract Labour	$ 1,026	26%		$ 1,538	26%
Contractor Expenses included above	$ -	0%		$ -	0%
SAP Hardware & Software	$ -	0%		$ -	0%
Internal Resources - Backfill or Charged	$ 485	12%		$ 727	12%
Misc Project Costs	$ 81	2%		$ 122	2%
EARG Practice & Governance Extension	$ 1,391	35%		$ 2,086	35%
EARG Tools Extension (Phase 3)	$ -	0%		$ -	0%
Contingency (25% of Direct Costs)	$ 745	19%		$ 1,118	19%
IDC and OH	$ 250	6%		$ 375	6%
Phase 2 Total	**$ 3,977**	**100%**		**$ 5,966**	**100%**

Summary of Phase 2 Costs for Recommended Alternative

4 Approvals

Barry Reimer is appointed Project Manager with authority and responsibility in accordance with the Project Management Policies and Procedures of BC Hydro, Generation Project Delivery and Engineering.

Initiator:		
	Diane McSherry, Director Project Delivery, EARG	Date
Sponsor:		
	Chris O'Riley, Senior Vice President, EARG	Date
Accepted by:		
	Barry Reimer, Project Manager	Date
Reviewed[1] by:		
		Date

[1] For compliance with PSDP and EARG standards.

BC hydro

Project Portfolio Management (PPM)

PROJECT CHARTER

Phase 1

September 10, 2008

Version 1.1

TABLE OF CONTENTS

1. APPROVAL 5

2. EXECUTIVE SUMMARY 6

3. PROJECT OVERVIEW 6

3.1. PROJECT DESCRIPTION 6
3.2. KEY DEFINITIONS 8
3.3. BACKGROUND 10
3.4. CORPORATE IT&T STRATEGY 10
3.5. PROJECT KEY OBJECTIVES 10
3.6. PROJECT BENEFITS 10
3.7. STAKEHOLDERS & FIRST NATIONS 11
3.8. PROJECT CRITICAL SUCCESS FACTORS 11
3.9. PROJECT GUIDING PRINCIPLES 11
3.10. KEY RISKS 13

4. PROJECT SCOPE 14

4.1. ORGANIZATIONAL SCOPE 14
4.2. BUSINESS PROCESS SCOPE 14
4.3. CHANGE MANAGEMENT SCOPE 17
4.4. TECHNICAL SCOPE 17
4.5. OUT OF SCOPE 18
4.6. PROJECT CONSTRAINTS & ASSUMPTIONS 18
4.6.1. Constraints 18
4.6.2. Assumptions 19

5. PROJECT DEPENDENCIES 19

5.1. SAP FINANCIAL SIMPLIFICATION INITIATIVE (FSI) 19
5.2. PROCURE TO PAY (P2P) PROJECT: 19
5.3. P2P CONVERSION TO SAP 19
5.4. RECORDS AND INFORMATION MANAGEMENT PROJECT (RIM) 20
5.5. PROJECT MANAGEMENT SERVICES PARTNERSHIP (PMSP) 20
5.6. OTHERS: 20

6. PROJECT APPROACH 20

6.1. METHODOLOGY 20
6.2. MAJOR MILESTONES 20

7. PROJECT GOVERNANCE AND ORGANIZATION 21

7.1. PROJECT GOVERNANCE 21
7.1.1. Steering Committee Protocols & Procedures 21
7.1.2. Meetings 21
7.1.3. Communications 22
7.1.4. Issue Resolution & Decision-Making Process 22
7.1.5. Documentation 23

7.2. PROJECT ORGANIZATION 23
7.3. ROLES & RESPONSIBILITIES 24
7.3.1. Project Sponsors 24
7.3.2. Project Initiator 24
7.3.3. Steering Committee 24
7.3.4. Business Advisory Group (Phase 2 & 3) 25
7.3.5. Project Director 25
7.3.6. Senior Project Manager 26
7.3.7. Chief Process Architect 26
7.3.8. Manager Business Transformation 27
7.3.9. PPM Process Architect (TBD for Phase 2 and 3) 27
7.3.10. Business Process Design Lead 27
7.3.11. Change Management Specialist 27
7.3.12. Project Support 28
7.3.13. Other Project Roles (Phase 2 and Phase 3) 28

8. PROJECT MANAGEMENT 28

8.1. PROJECT TIMELINE & DELIVERABLES 28
8.1.1. High Level Timeline 28
8.1.2. Project Deliverables 28
8.2. PROJECT CHANGE CONTROL 29

APPENDIX A – GLOSSARY OF TERMS AND REFERENCES 31

APPENDIX B – PROJECT CHANGE REQUEST FORM 34

APPENDIX C – PROJECT SCHEDULE 35

Document Information and Revision History

Document Owner	Barry Reimer
File Name(s)	PPM Project Charter
Stored at	TBD
Original Author(s)	Barry Reimer, PPM Project Director Patricia Hamilton, PPM Senior Project Manager

Revisions:

Version	Date	Comments
Version 0.1	July 16, 2008	Initial draft table of contents for review with B. Reimer (P. Hamilton)
Version 0.2	July 20, 2008	Finalization of Table of Contents (P. Hamilton)
Version 0.3	Aug 6, 2008	Updated contents of document, including feedback from B. Reimer (P. Hamilton)
Version 0.4	Aug 11, 2008	B. Reimer edits
Version 0.5	Aug 12, 2008	Draft issued to Steering Committee for Review
Version 1.0	September 2, 2008	Final for Phase 1 including addition of Project Governance framework previously distributed as a stand-alone document, and feedback from Steering Committee members.
Version 1.1	September 10, 2008	Updated with final feedback from September 5th Steering Committee meeting.

1. Approval

The project charter for the Project Portfolio Management initiative was completed as a deliverable for Phase 1 of the project which started in July 2008.

Approval of the Phase 1 Project Charter will be the initial contents of this Project Charter (version 1.1, dated 20080910).

Subsequent updates will be completed as required, after prior discussions and approval of the Steering Committee.

Role	*Name*	*Title*	*Signature*	*Date*
Project Sponsor	Chris O'Riley	Senior Vice President EARG		
Project Sponsor	Charles Reid	Executive Vice President and Chief Financial Officer		
Project Initiator	Diane McSherry	Director, Generation Project Delivery, EARG		
Steering Committee	Trish Pekeles	Chief Strategy Officer		
Steering Committee	Don Stuckert	Vice President & CIO		
Steering Committee	Roy Grout	Vice President Engineering, EARG		
Steering Committee	Brian Tabe	Director, Finance Field Operations		
Steering Committee	Mark Eldridge	Acting Director Finance, EARG		
Project Director	Barry Reimer	PPM Project Director		

2. Executive Summary

The BC Hydro **Project Portfolio Management (PPM)** initiative is an enterprise wide sustaining capital initiative that will provide a flexible, scalable solution to enable improvements in project, program and portfolio execution across BC Hydro.

The initiative is in response to BC Hydro management recognition that improvements to current processes and tools are required to efficiently manage BC Hydro's significantly increasing capital plan over the coming years.

The purpose of PPM Project is:

1. To identify and refine business processes to support project and portfolio management across the BCH organization
2. To identify and implement new technologies, based on the BCH corporate IT&T Strategy, to enable the organization-wide project and portfolio management processes.
3. To retire legacy applications where functionality has been replaced.

This PPM Project Charter is a statement of the scope, objectives and participants in the project and serves as the terms of reference. Updates and approvals to the Project Charter will occur prior to each subsequent phase of the project.

3. Project Overview

3.1. Project Description

Project Portfolio Management (PPM) is an industry-wide term used by organizations to describe methods for analyzing and collectively managing a group of current or proposed projects as well as best achieving the organization's business or technical strategic goals.

BC Hydro has initiated a project to define and implement a solution for new project, program and portfolio management tools for all BCH business units that use such tools. The BC Hydro vision for PPM is to implement a common Project Management Lifecycle across all business units, enabled by a new set of PPM tools using a common data repository. The new tools should allow for flexibility in the detailed process design to meet the specific business requirements of any participating business unit, while still enabling roll-up and drill down reporting capability across BC Hydro, without manual intervention and significant administrative support. For individual users, the new processes and tools should enable a clear understanding of their role in the project management lifecycle and guide them efficiently through day-to-day activities appropriate for their role, while ensuring that controls appropriate to their business unit and BC Hydro corporately are met.

As implementation of new processes and tools could ultimately impact over 1,000 BCH employees, as well as other BCH customers, stakeholders and service providers, much emphasis must be placed on change management to ensure that the expected value from the tools and process change is delivered, and that training and support be provided to allow employees to effectively adapt to new tools and processes while continuing to deliver their committed work volumes.

It is also important to manage the overall implementation risk by appropriately staging the rollout across the various business units with an understanding of the need for a timely implementation.

The BCH PPM project will be in three (3) major phases. The approach outlined below is based on the assumption that SAP is the default solution able to meet 80% of the PPM business requirements. If through analysis of the SAP toolset this assumption proves to be false, the project approach, schedule and budget will be altered to include a more traditional package selection exercise.

The three major phases are:

Phase 1 – Project Initiation

In this phase, the focus is to initiate the project, define scope and start the development of the business case. Key activities for this phase include:

- Verification of scope
- Establishment of project governance structure
- Creation of project charter
- Defining a high level solution footprint and related high level conceptual future state business process
- Preparing a high level PPM business case for all of phases of the project
- Creating a schedule, cost estimate and resource plan for Phase 2.
- Preparing a Project Initiation Summary as the basis for Stage Gate Approval from the Steering Committee to move to the next phase.

Phase 2 – Solution Verification

The second phase will include detailed solution assessment and planning activities:

- Complete a detailed SAP fit assessment to document specific future state processes for all business units (Level 1 processes);
- Refinement of the business requirements
- Refinement of resource plan and Project Charter update;
- Conduct a formal system implementation services RFP and vendor evaluation process;
- Create a detailed implementation and change management plan (based on several phases of implementation);
- Update the PPM Business Case
- Presentation of the recommended solution and business case to the Steering Committee for Stage Gate Approval to move to the next phase.

Phase 3 – Solution Implementation

The solution implementation phase will include activities for a standard, phased implementation of the solution defined in Phase 2, and will include:

- Project start-up for integrated vendor/BC Hydro implementation team
- Installation of a new system infrastructure (hardware and software)
- System configuration
- Interface development
- Development of test plans and system testing
- Phased implementation
- System and process training (change management)

- Cutover to the new system
- Decommissioning of legacy systems

3.2. Key Definitions

One of the early challenges with the PPM project is have a consistent definition of terms related to project management that are in common use, but do not necessarily have the same meaning for every individual or every context. For that reason, those commonly used terms are defined here to provide more clarity for all project team members and stakeholders.

PROJECT MANAGEMENT - Project Management is the application of knowledge, skills, tools and techniques to project activities to meet project requirements and to ensure that a project fulfills the business requirements and is on time and on budget. Management and scheduling tools help the process, together with regular reviews of progress and risks to ensure specific project goals and objectives are met.

Projects need to be performed and delivered under certain constraints. Traditionally, these constraints have been listed as "scope," "time," and "cost". These are also referred to as the "Project Management Triangle," where each side represents a constraint. One side of the triangle cannot be changed without affecting the others. A further refinement of the constraints separates product "quality" or "performance" from scope, and turns quality into a fourth constraint.

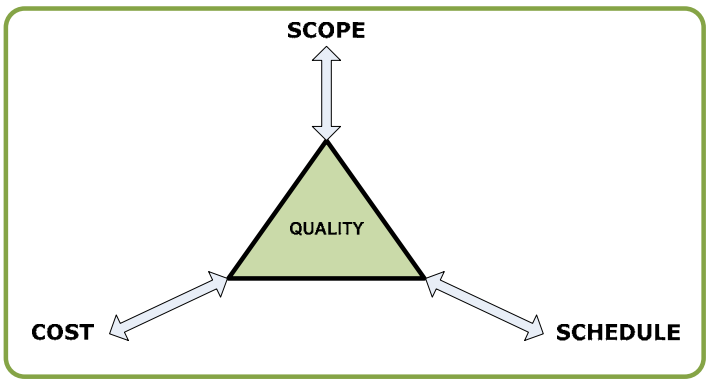


Figure 1 – Project Management Triangle

PROJECT - A Project is defined as a finite endeavor undertaken to create a unique product, service, or result having a specific start and completion dates which brings about beneficial change or added value. A Project has an assigned Project Manager that will follow some form of methodical project management approach to managing scope, schedule and cost.

PROGRAM - A program is a group of related projects managed in a coordinated way to obtain benefits and control not available from managing them individually. Programs may include elements of related work outside of the scope of the discrete projects in the program. Examples of programs within BC Hydro would include the vegetation management program in field operations, and the Power Smart marketing programs.

Program Management is the centralized, coordinated management of a group of projects to achieve the program's strategic objectives and benefits.

PORTFOLIO - A portfolio is a collection of projects and/or programs that are grouped together to facilitate effective management of that work to meet strategic business objectives.

The projects or programs in a portfolio may not necessarily be interdependent or directly related. Examples of portfolios in BC Hydro include the portfolios of generation projects in EARG (Portfolio A, B, C & D) as well the portfolio of IT projects managed by the OCIO.

For further clarity, the relationship between projects, programs and portfolios to be used for the BC Hydro PPM project is shown in Figure 2 below.

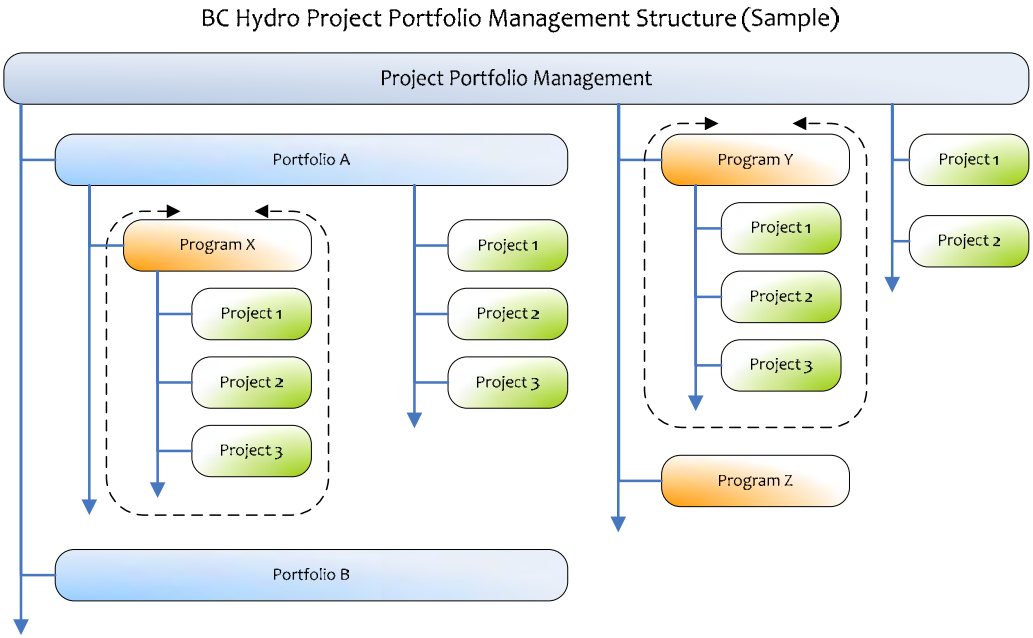


Figure 2 – Relationship Between Portfolios, Programs and Projects

PROJECT PORTFOLIO MANAGEMENT (PPM) - is an integrated system for managing a project-based business. It is often referred to as the next generation of project management as it fundamentally changes the organization's understanding of managing projects.

PPM is the practice of managing projects as investments and provides for the management of project management processes and alignment with business goals. PPM also measures available resources, such as time and cost, against all the proposed projects and applies consistent methodology and tools to align them with the goals of the business. It also describes methods for analyzing and collectively managing a group of current or proposed projects based on numerous key characteristics.

The fundamental objective of the PPM process is to determine the optimal mix and sequencing of proposed projects to best achieve the organization's overall goals - typically expressed in terms of hard economic measures, business strategy goals, or technical strategy goals - while honoring constraints imposed by management or external real-world factors.

3.3. Background

BCH corporately has recognized that current Project Portfolio Management (PPM) processes and tools are not adequate for current and future project delivery requirements across the organization.

The inconsistency in project controls, reporting, document management processes and tools introduce project risk for projects of all sizes. There is a management concern that Project Managers and their delegates spend too much time working inefficient systems, creating manual reports, and moving documents through manual approval processes, which would be better focused on project quality, value and safety.

3.4. Corporate IT&T Strategy

The key principles from the recently approved BCH IT&T Strategy that will drive the PPM initiative include:

- New technology implemented with “One Hydro” perspective
- Business processes designed in terms of Enterprise and Business Group
- SAP is the default technology solution
- There should be a single source of information
- 80/20 Rule – solution design that will meet 80% of business needs

3.5. Project Key Objectives

The key objectives of the PPM initiative are:

- To identify and refine business processes to support project and portfolio management across the BCH organization
- To identify and implement new technologies, based on BCH Corporate IT&T Strategy, to enable the organization-wide project and portfolio management processes
- To retire legacy applications where functionality has been replaced

3.6. Project Benefits

It is anticipated that key project benefits resulting from PPM will include:

- *Productivity:* Increased productivity that will allow BCH to execute a higher capital spend per $ of resource dedicated to capital projects. A minimum of 10% improvement in productivity for direct labour and relevant capital overhead is expected.

- *Ongoing System Support:* The transition from multiple systems to one PPM system will see ongoing annual system support costs reduced.
- *Capital Spend Efficiency:* Improved and timely visibility of project information will improve decision making over the course of the project will potentially reduce total project lifecycle costs and timeline.
- *Reduced Project Risk:* Timely, consistent, and accurate project information will support earlier identification of issues and better decision making by project managers and executives at all stages of the project life cycle. This will ultimately reduce the risk of cost and schedule overruns.
- *Reduced Regulatory Effort:* Improvements in planning and management of projects will increase credibility with the regulator. Over time this will reduce required regulatory effort for project approvals.

3.7. Stakeholders & First Nations

The key external stakeholder impacted by this initiative is the British Columbia Transmission Corporation (BCTC), both as a customer for engineering and field services, and as a service provider in managing substation distribution assets. Other contractors providing services to BC Hydro projects will also be impacted by process and technology changes, with specific impacts to be determined as the PPM project evolves.

There are no known or anticipated First Nations impacts at this time.

3.8. Project Critical Success Factors

Key critical success factors for PPM include:

- Broad user acceptance of the new technology and process changes
- Appropriate integration of the PPM project with other related initiatives such as Procure to Pay (P2P) and the Financial Simplification Initiative (FSI)
- Visible improvements in quality of project, program and portfolio delivery
- Visible improvements in productivity project, program and portfolio delivery
- Standardized tools and processes, with a common data repository for reporting and monitoring.
- A decrease in project delivery risk

3.9. Project Guiding Principles

The following are the project principles that will guide the project team through each phase of the project:

- Implement simplified and standardized processes
  - Eliminate redundant, duplicated work and data reconciliation activities
  - Implement simpler, standard, and consistent processes

  - Design processes that are both scalable and sustainable
  - Utilize single source data repositories and “enter once” principles to enable data confidence and accuracy
  - Balance the financial reporting needs with the ease of executing the process
  - Be practical; keep the 80/20 rule in mind and avoid developing perfect processes; do what is necessary & sufficient
  - Look for quick wins in process improvements that could be implemented in advance of the enabling technology.

- Implement a transparent control environment
  - Build risk-based controls rather than requiring extensive reviews and approvals
  - Embed control mechanisms that are efficient, effective and reinforce the right behaviors

- Provide people the ability to more easily access the information they need
  - Provide a common data repository and build standard reports using Business Intelligence principles and avoiding the use of “data dumps”
  - Provide reports that are accessible to all users and do not require specialists to execute
  - Implement a toolset that supports the business but does not try to replace good management practices or sound decision making
  - Provide visibility of key information throughout the process for all types of work

- Improve productivity
  - Increase efficiencies and lower the costs of getting work done by reducing manual reporting and data reconciliation efforts

- Leverage technology
  - Take advantage of the capabilities that BCH already has but do not presently use
  - Recognize that BC Hydro is not unique and use the applications as they were intended.

- Incorporate BC Hydro Values
  - Ensure the new process is aligned with BCH values of safety, service, integrity and accountability
  - Design processes that provide clear accountabilities and support cross-functional teamwork
  - Balance the Triple Bottom Line elements of Cost, Social Responsibility and the Environment

- Manage the Business Change
  - Use proven methodology and techniques to support the business through the change process
  - Collaborate with stakeholders and ensure employee engagement with the project and the new processes
  - Provide visibility into how the solution fits within BC Hydro’s broader vision and plans

- Provide effective change management resources & deliver a targeted, sustainable, blended learning approach

3.10. Key Risks

A number of key risks for the PPM initiative are to be monitored and appropriate risk mitigation strategies will be developed as required.

Current identified key risks include:

- *Change Management:* Implementation of a new PPM toolset will require a significant change management effort across a large base of existing users. In the early stages of the project, there is potential for conflict between the IT&T strategy with SAP as the default solution, and the ability of SAP to meet the perceived or actual needs of the business. It is also important to make sure that business units that are lighter users of PPM processes and tools are not completely overshadowed by the heavier users.

- *Project Resources*: This project requires resources with a deep understanding of project and portfolio management processes and tools at BC Hydro, as well as solid technical expertise with existing legacy systems and interface and SAP. Availability of skilled and knowledgeable project resources, both internal to BC Hydro and with ABSU, will impact project execution.

- *Dependency on Related Projects:* There are several other initiatives such as the Financial Simplification Initiative and P2P that may have a direct impact on PPM design, scope, project resource availability and implementation schedule.

- *Scope*: The scope of this project is very large, with many touch points to other processes and tools, and it may be a challenge to limit PPM scope to those interfaces.

- *Schedule*: The broad scope of the PPM project across the organization and the many dependencies on related technology initiatives significantly increase the risk of schedule slippage.

- *Cost*: The scope of the project is broad, and there is a risk that costs may be higher than anticipated. Cost risk will be further articulated during Phase 2 as a more detailed project budget is prepared.

- *Sponsorship Focus*: There are several other significant corporate initiatives currently in progress at BC Hydro, and maintaining the focus and participation of the project sponsorship and senior executives throughout the project life cycle may be a challenge.

- *Business Risk*: Inability to deliver capital projects on time and budget will likely directly impact BC Hydro's commitment to meet asset reliability requirements.

A detailed Risk Management Strategy will be developed for subsequent project phases.

4. Project Scope

4.1. Organizational Scope

The primary focus of this project enterprise-wide initiative in BC Hydro is noted in the BCH organization chart below. Business units that are included in the organization scope for Phase 1 are highlighted in yellow in Figure 3 below, and were agreed in principal in the July 25th, 2008 Steering Committee.

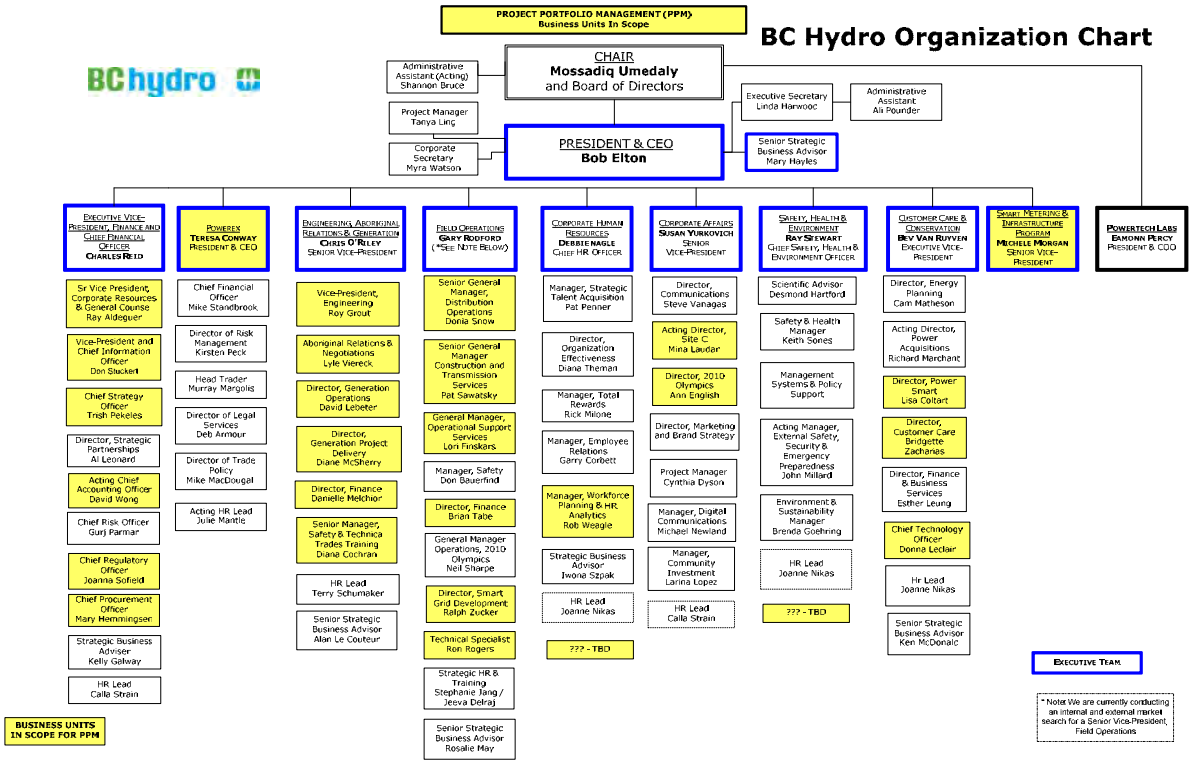


Figure 3 – PPM Organizational Scope

During Phase 1, the project team will meet with representatives from each business unit to verify ongoing participation in the PPM initiative due to the frequency or scale of projects within the business unit, or for regulatory/confidentiality issues. Specific business units that may be deemed out of scope at the end of Phase 1 include: Powerex, Regulatory, Corporate Human Resources, and Safety, Health and Environment.

4.2. Business Process Scope

The business process scope will include the corporate view of project, program and portfolio management with inputs from current business unit standards including the Project and Service Delivery Processes (PSDP) and the IT Development Standard Processes (ITDSP). A combined corporate wide process review for PPM will be defined in Phase 1, which will include the business unit specific perspective of the processes.

Work will be done in Phase 1 to document and assess the current process in each business unit at a high level, as well as to identify and document the process strengths and improvement opportunities. This will form the foundation for Phase 2 which will include a more detailed SAP fit assessment and a more detailed description of the future state solution (process and technology).

The high level processes related to Project, Program and Portfolio Management considered to be in scope are outlined in Figure 4 and defined below.

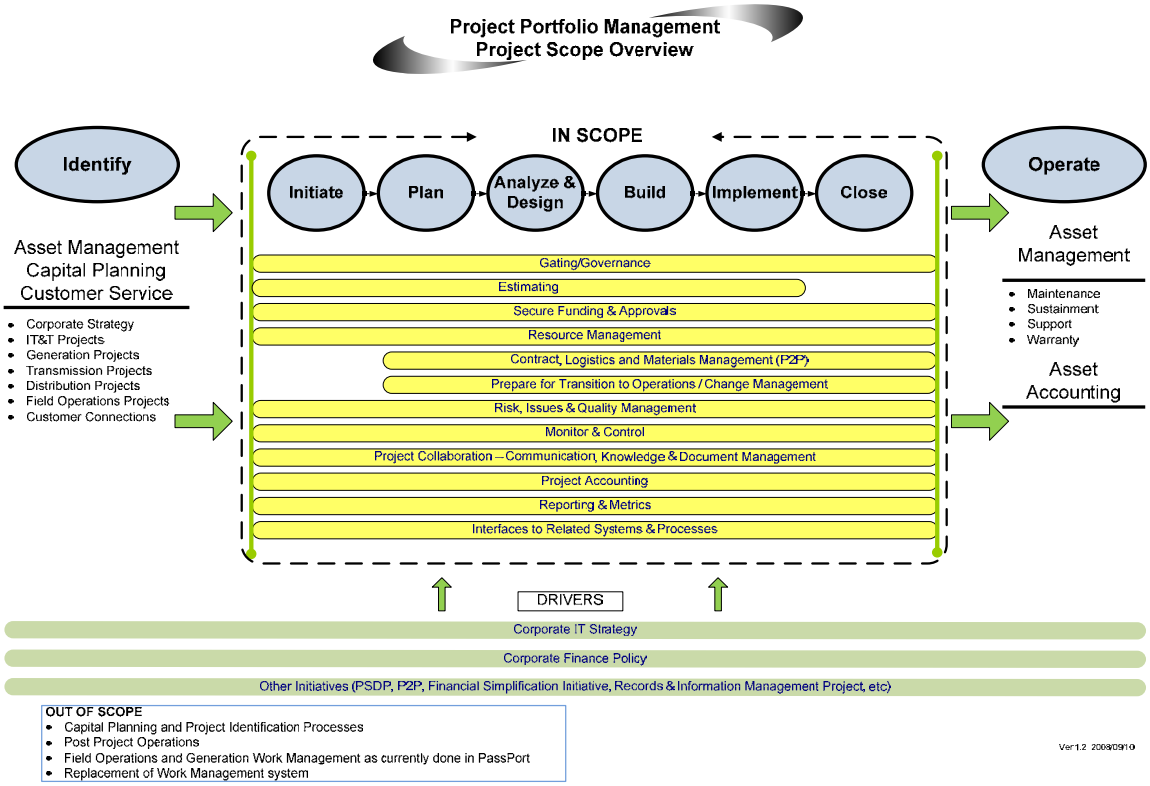


Figure 4 – PPM Process Scope

IDENTIFY

The annual corporate strategic plan and capital project planning cycle are reviewed and updated on an annual basis. During this process an evaluation of major capital projects or corporate initiatives is derived from the business operations and IT&T strategic plans and a formal identification of capital projects, programs and portfolios is completed across the organization. The 'Identify' process provides input to the PPM processes. Any changes to the 'Identify' process are considered to be out of scope for the PPM initiative as by itself is a large and complex process, and would require a dedicated project team to appropriately analyze and address any changes.

INITIATE

The project initiation process refers to the activities related to starting up a project. This would potentially include documenting a business case,

conducting a feasibility study, creating terms of reference and a project charter, the appointment of Project Sponsors, project team and project management activities related to setting up a project office.

PLAN

The planning process includes detailed planning and estimating activities for all aspects of the project, including a roadmap for the project by creating the following: definition of roles and responsibilities; resource estimates; project budget; project schedule; change management plan; quality plan; communication strategy and implementation plans. This phase serves as a foundation for the life cycle of the project.

ANALYZE & DESIGN

This process includes the gathering of business and technical requirements, definition of processes, and defines the project at a detailed level. For construction projects, it would include creation of drawings and applications for permits.

BUILD

The build process is the development and construction of the deliverables, controlling the project delivery, scope, costs, quality, risks and issues. The process will vary depending on the asset being built. This process will also confirm that the project requirements defined earlier have been achieved.

IMPLEMENT

The implementation process is the execution of tasks related to the deliverables of the project. The functional application or asset is available, tested and in a 'ready state' for all business, technical and supporting departments. The project deliverables, processes and activities have been incorporated into the ongoing business and technical environments.

CLOSE

Once the project has completed the other stages it enters this phase. The purpose of this phase is to evaluate the project, address future actions related to the project, and ensure the documentation is completed. Steps are also taken to transition and handover of the application or project deliverables to the support function, preparation of the Project Closure Report, and documentation and communication of any lessons learned.

POST IMPLEMENTATION

The Project Deliverables have been transitioned to the business unit and support functions. Subsequent support, sustainment, and warranty management activities are included in this phase. The PPM processes provide input to post implementation activities, but otherwise these activities are considered to be out of scope for the PPM initiative.

Currently there are a number of BCH Project Management Initiatives underway that are related to Tools and Processes. The business requirements, preliminary findings and assessments from these initiatives will be rolled into the PPM Project which will become the 'master' Project Management initiative.

The BCH PM initiatives to be used as inputs to PPM include:

- EARG Drawings/Records Migration (FileNet / McLaren Software)
- Project Management Services Assessment (MWH) (SharePoint/Primavera)
- Goto Sargent/Transmission Engineering Tools/Process Assessment
- Project Document Repository (OCIO) (SharePoint/FileNet)
- Procure to Pay (P2P) (Passport/SAP). The P2P project will continue to be managed as a separate project, but process and systems changes resulting from the project will be inputs to the PPM project.

4.3. Change Management Scope

A key component of the PPM initiative is organizational Change Management, including communications and training. It is not anticipated that there will be any significant change in organizational design resulting from this initiative, however it is possible that new roles, or changes to roles, may result from changes in processes and technology.

Phase 1 activities will include the identification of the number of users impacted enterprise-wide, and an assessment of the major process gaps, challenges and opportunities. This will feed into a more comprehensive change management plan to be developed in Phase 2.

4.4. Technical Scope

The following tools currently in use at BCH are to be reviewed and included as part of the PPM project scope:

InfoPM	Info Trac
TRMS	ProSight
SharePoint	Primavera
MS Project	FileNet
MS Project Server	Trirega
Shared Network Drives	ESP
Brio	EBR (EDW) (Cognos)
SPOT	QUAD
SAP – Financials, Project Costing, Project Portfolio Management, xRPM, Enterprise Portal, cProject Suite Collaboration Projects, Workflow, etc.	CM/CROW
MS Excel as a PPM tool (e.g. GCCR)	Other Collaboration Tools related to communication, knowledge and document management
MS Word as a PPM tool (e.g. status report)	

Additional technical items that are considered in scope for the PPM initiative include applications, hardware and middleware. At the present time there have been no identified impacts to telecommunications at BCH.

4.5. Out of Scope

Primary functional activities deemed out of scope for the PPM initiative and document in Figure 4 in Section 4.2 are:

- Project Identification and Capital Planning processes for all business units.
- Post Implementation operate processes related to Asset Management (Sustainment, Support, Warranty), and Asset Accounting.
- Field Operations and Generation Work Management as currently done in PassPort. Work Management generally refers to operate and maintain activities as well as smaller customer driven jobs that are generally managed within the PassPort Work Management System. A "job" in the context of Work Management is generally managed by a Field Foreman or Field Supervisor rather than by a Project Manager. Note the definition of "Work Management" will be further clarified through the current state process review work in Phase 1.
- Replacement of the Work Management System (PassPort, DAD, etc).
- Organizational structure redesign
- A complete redesign of Project and Service Delivery Practices (PSDP) is out of scope, however it is anticipated that some changes to PSDP processes and templates will be required, both as a result of the PMSP (MWH) work and to adapt PSDP to a common project life cycle across BC Hydro. The changes required to adapt to a common project life cycle will be in scope.

The following tools currently in use at BCH are to be out of scope for the PPM initiative and will be not reviewed for replacement.

MS Word (other than use as a PPM tool)	PassPort (previously deemed unacceptable for PPM)
PeopleSoft Financials and project costing (replaced by SAP)	DAD
CRO	

Anything else not specifically identified as being in scope is considered to be out of scope.

4.6. Project Constraints & Assumptions

The following constraints and assumptions will be used in defining the project scope and management plans:

4.6.1. Constraints

The existing Project and Service Delivery Practices (PSDP) and IT Development Standard Process (ITDSP) will be taken as inputs for this project with the objective of implementing a "One Hydro" view of Project Portfolio Management that will support the needs of individual business units.

4.6.2. Assumptions

- SAP is the default solution able to meet 80% of the PPM business requirements. If through analysis of the SAP toolset this assumption is proven to be false, the project approach will be altered to include a more traditional package selection exercise.
- Assuming that SAP is an acceptable enabling technology for PPM processes, integration will be based only on the new SAP implementations for project accounting and Procure to Pay (P2P), and not the legacy PeopleSoft and PassPort implementations. This will mean that PPM will not go into production in advance of FSI and P2P.
- Passport is not an acceptable PPM tool as determined during Phase 1 of the EARG Work Management initiative.
- BCH OCIO IT&T Strategy for the Future Working Paper dated June 20, 2008, v0.080620_1, is the basis for the IT&T Strategy approved by the BCH Executive Team and presented to the BCH Audit and Risk Management Committee.
- Legacy applications no longer required as part of the PPM toolset will be retired.
- Existing historical data from any current PPM applications or systems being retired will not be converted to the new PPM toolset. Selective exceptions will be reviewed for active projects, programs and portfolios.

5. Project Dependencies

5.1. SAP Financial Simplification Initiative (FSI)

The FSI project is an exercise in financial process improvement to meet the International Financial Reporting Standards requirements for BC Hydro. This work will be done while converting to SAP. The project includes all financial processes as well time entry and expense reporting. Configuration of any PPM functionality in SAP will be directly linked to the financial processes implemented under FSI.

5.2. Procure to Pay (P2P) Project:

The new processes being developed through PPM will rely heavily on the new supply chain processes being developed by the P2P project for the requisitioning, delivery, payment, and cost tracking of capital materials and services. It will be necessary to ensure the two process design exercises are aligned to ensure the overall objectives of both will be met.

5.3. P2P Conversion to SAP

A project to convert the new P2P processes from PassPort to SAP has been flagged in the IT&T Strategy, but had not yet been defined. As P2P is an integral component of PPM, this project will be required in parallel with PPM to achieve PPM objectives.

5.4. Records and Information Management Project (RIM)

A corporate initiative sponsored by Ray Aldeguer to improve access and maintenance of critical documents across BC Hydro.

5.5. Project Management Services Partnership (PMSP)

A project being conducted in EARG with MWH to review project management practices, processes, tools and staffing models for the John Hart, Ruskin and Upper Columbia projects. Deliverables from this project will be used as input for Phase 2 of PPM.

5.6. Others:

None identified at this time.

6. Project Approach

6.1. Methodology

The existing framework from the IT DSP project methodology will be followed for the PPM project. Standard project management standards regarding issues and risk management, reporting, resource management etc. will be put into place.

6.2. Major Milestones

Phase 1 – Project Initiation

- Approval of Governance Structure – August 2008
- Approval Project Charter – September 2008
- High Level Business Case Complete – October 2008
- Phase Completion and Approval to Move to Phase 2 – October 2008

Phase 2: Solution Verification (Dates to Be Determined)

- Future State Process Design Complete
- SAP Package Fit Confirmation Complete (package fit confirmation may be done in conjunction with future state process design)
- RFP for Implementation Services Issued
- Implementation Services RFP Vendor Evaluation Complete
- Updated Business Case Approved
- Implementation Plan Approved
- Change Management Plan Approved
- Phase Completion and Approval to Move to Phase 3

Estimated duration: 4 - 6 months

Phase 3: Solution Implementation (Dates to Be Determined)

- Signed Contracts with preferred implementation vendor(s).
- New System Infrastructure Installed (hardware and software)
- System Configuration Complete

- Interface Development Complete
- System Testing Complete
- System and Process Training Started
- Pilot Implementation Complete
- Implementation Complete
- Decommissioning of Legacy Systems Complete
- Project Completion

Estimated duration: 24 - 30 months

7. Project Governance and Organization

7.1. Project Governance

Project Governance is used to describe the process for project management and oversight that needs to exist for a successful project.

The PPM Project Governance is comprised of the Project Sponsors, Project Initiator and the Steering Committee. The Steering Committee is comprised of Senior Executives representing key BC Hydro business units as shown on the organizational chart below. Steering Committee members will champion the project and provide approvals, advice and counsel throughout the project life cycle.

The Project Director is also a member of the Steering Committee and will provide support and input to the senior Executives representing the organization.

The objectives of this section are to:

- Define the membership and structure of the Sponsors, Steering Committee, and project team
- Document the protocols and procedures that the Steering Committee will follow.
- Define the role and key responsibilities of the Sponsors, Steering Committee, and Project Team members.

7.1.1. Steering Committee Protocols & Procedures

7.1.2. Meetings

The purpose of the meetings is to review project progress, make decisions on recommendations or issues raised to the Steering Committee, and approve mitigation strategies for major risks to the PPM project. The following documents the protocols for these meetings:

- The Steering Committee will meet approximately every two weeks for Phase 1. Scheduled meeting frequency will be reviewed at the beginning of each subsequent project phase. Extraordinary meetings may be convened in the interim if there is an urgent issue that requires an immediate decision from the Steering Committee.
- Attendees are the Senior Executives from key business units that make up the Steering Committee, the PPM Project Director and invited guests as required for special discussions or resolution of issues. These Senior Executives are responsible for being the decision maker for

their business units.

Quorum for a Steering Committee meeting will be at least 2/3 in attendance with ideally one Senior Executive member from each of the business units, or their senior executive representative, and the Project Director. The PPM Senior Project Manager will attend and take minutes.

- The Chair is the Project Initiator, Diane McSherry.
- The Chair will prepare the agenda, with the Project Director, for each meeting and distribute to participants 3 business days in advance of the meeting.

  Where applicable, the following documents will be distributed with the agenda ahead of each meeting:

  - Previous Meeting Minutes
  - Status Report
  - Budget Summary (Phase 2 & 3)
  - Other Supporting Documentation (as required)
  - For each issue raised to the Steering Committee, an Issue Summary and Recommendation document will be developed (as required)
  - Presentation (as required)

- Minutes will be recorded from the meetings noting decisions/resolutions made and a log of action items from the meeting will be maintained in the minutes. A log of all decisions/resolutions made by the Steering Committees will be kept.
- Each executive member of the Steering Committee will have one vote. For a motion or resolution to be passed, or a decision agreed upon, the vote should be unanimous. In the spirit of cooperation, there will be a balanced approach to key project decisions that impact quality and cost by all members of the Steering Committee.

7.1.3. Communications

Decisions made by the Steering Committee will be communicated immediately to all appropriate team members, either for follow-up or implementation.

In the event that a decision is delayed or deferred, the team will be advised accordingly, including an estimated timeframe for resolution. It will be the Project Director's responsibility to communicate decisions/resolution as appropriate to the project teams.

7.1.4. Issue Resolution & Decision-Making Process

Timely decision-making will be required of the Steering Committee in order to ensure the success of this project. A timely decision made by the Steering Committee is a decision that is made in time to avoid any impact on timeline, cost or deliverable dates.

Issues not resolved by the Project Director will be escalated to the next Steering Committee. If an immediate resolution is required, an extraordinary meeting of the Steering Committee will be convened.

Prior to any issue presented to the Steering Committee, an 'Issues Paper' will be prepared and forwarded to all Steering Committee members that outline the Issue, Recommended Resolution, etc.

7.1.5. Documentation

All documentation related to or used by the Steering Committee (e.g. agenda, minutes, status reports, etc.) and the Project Team will be stored/maintained on the PPM SharePoint site.

Updates to this Governance Structure, if required, will occur prior to any subsequent Phase of the PPM Project.

7.2. Project Organization

The PPM Project Organization is composed of the Project Sponsors, Project Initiator, Project Director and Project Team, and those areas in BCH that may provide support to the project. This is described in the Figure 5 below.

Appropriate roles and responsibilities for the key participants are noted in Section 7.3. Additional project resources are required for Phase 2 and Phase 3 and will be added to future iterations of the Project Charter.

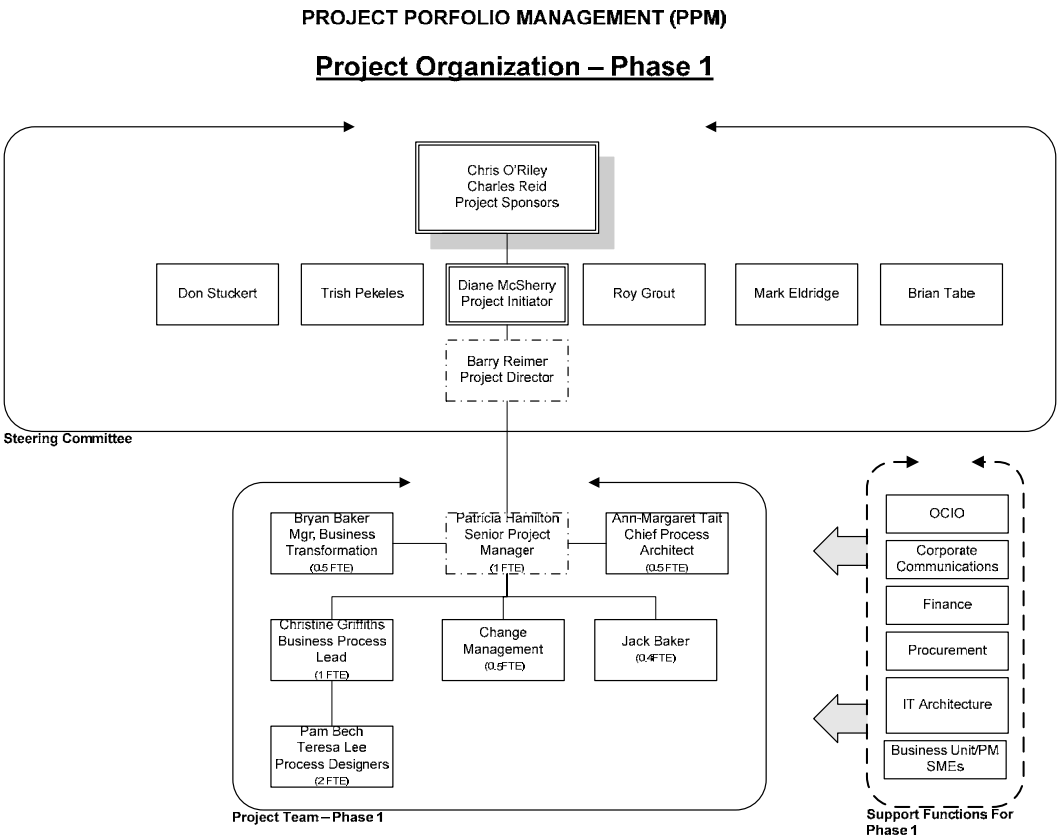


Figure 5 – PPM Phase 1 Organization Chart

7.3. Roles & Responsibilities

7.3.1. Project Sponsors

The role of the Project Sponsors is to provide executive level direction to the project and secure project funding.

Key Responsibilities:

- 'Champion' the project at a senior executive team and corporate level
- Assume ultimate authority over and responsibility for the project
- Report project status to the Corporate Executive Team and the Board of Directors
- Secure project funding
- Resolve issues that require executive involvement or issues that cannot be resolved by the Steering Committee

7.3.2. Project Initiator

The role of the Project Initiator is to manage the overall strategic direction of the project and relationships with the involved business units and key stakeholders at a senior management level.

Key Responsibilities:

- 'Champion' the project within the organization
- Assume operational authority over and responsibility for the project
- Report significant milestones or any major changes in the scope of the project to the Project Sponsors
- Ensure the commitment of project participants from the business units
- Set overall project direction
- Guide and oversee the project
- Approve project scope and objectives
- Monitor overall project progress through regular status meetings
- Review and decide upon Change Requests that materially affect the project budget and schedule
- Ensure the removal of organizational barriers
- Resolve issues that require senior management involvement
- Attend and participate in project status meetings, as required
- Chair and Member of Project Steering Committee

7.3.3. Steering Committee

The role of the Steering Committee is to provide Senior Executive-level direction to the PPM project and resolve issues that cannot be resolved by the Project Director and the project teams, or any issues that occur between the business units. These Senior Executives represent key business areas across BCH that will champion the project and provide approvals, advice and counsel throughout the project life cycle.

Key Responsibilities:

- 'Champion' the project at a senior executive level
- Assume ultimate authority over and responsibility for the project
- Make timely decisions
- Approve written project scope changes that will have a materially negative impact on project milestones

- Monitor project funding and expenses
- Resolve issues that require senior executive involvement
- Act to 'steer' the project into the organization, removing obstacles, and provide the necessary business unit experts or resources for the project
- Meet monthly for Steering Committee and project status updates; additional meetings as required or warranted
- General management and on-going oversight of the project
- Member of Project Steering Committee

7.3.4. Business Advisory Group (Phase 2 & 3)

A Business Advisory Group (BAG) will be established in subsequent phases through the Project Charter updates, including membership and roles and responsibilities.

The BAG will provide advice on organization impacts, make decisions at an enterprise-wide level, and a direct line of communications back to the business units. These senior level representatives will have the authority to make decisions on behalf of the organization/business unit.

Currently identified membership includes representatives from key stakeholders and customers i.e. BCTC, BCH Corporate Human Resources, Customer Care & Conservation, IT Architect, Corporate Finance, and OCIO Projects and Portfolio PMO.

7.3.5. Project Director

The Project Director's role is to support the Project Sponsors, Project Initiator and Steering Committee members. Together with the other PPM Project Managers, the role is to create and manage project charter, project plan, project team, deliverables and budget.

Key Responsibilities:

- Plan, monitor and control project execution
- Manage change control process
- Direct and manage Project Charter
- Manage and finalize all project deliverables
- Make day-to-day project decisions on behalf of BC Hydro
- Maintains positive working relationships with all project stakeholders
- Manage project budget, scope, schedule, issue and risk
- Manage staffing of projects with employees and consultants
- Evaluate vendor proposals and negotiate contracts in conjunction with other BC Hydro legal and contracts groups.
- Communicate Steering Committee decisions back to the project teams as appropriate
- Monitors activities of any closely related projects (outside of assigned project team), which have interdependencies with the assigned project
- Implements risk mitigation strategies for key risk factors associated with the project
- Report progress and issues to Steering Committee through Status Reports and regular Steering Committee meetings.
- Prepare the agenda, project status, progress reports and other project information as required for the Steering Committee meetings
- Make recommendations on the resolution of issues requiring Steering Committee attention and raise the issues and recommendations to the Steering Committee

- Ensures decisions are made in a timely fashion
- Facilitates achievement of project critical success factors
- Attends and facilitate the Steering Committee meetings

7.3.6. Senior Project Manager

The Senior Project Manager's role is to provide executive support to the Project Director for all project deliverables, and is the primary contact for tactical operational project management during the project.

Key Responsibilities:

- Oversees and directs the activities and deliverables of the project team, which includes the Business Process and Change Management teams
- Monitors team progress and reports team status to the Project Director
- Facilitates resolution of business and technical issues raised by the team
- Plans, coordinates, and tracks tasks, completion responsibilities and resources
- Create and updates Project Charter, project schedule, resource tracking and other key project management deliverables
- Liaises on a day-to-day basis with the Project Director to ensure project success
- Maintains positive working relationships with all project stakeholders
- In conjunction with the Project Director, monitors the status of the project, and takes any steps necessary to re-direct priorities, and re-define the project organization and work plan to ensure completion of the project objectives and deliverables
- In conjunction with the Project Director, ensures project is managed within approved budget
- Conducts periodic status meetings with Project Team and management to review progress towards completion and resolution of issues
- Produces project status reports
- Obtains and monitors resource commitments from departments for assigned task completion
- Develop meeting materials and recording of minutes for Steering Committee and Executive meetings

7.3.7. Chief Process Architect

The role of the Chief Process Architect is to support the Project Director and Project Managers, and has the following key responsibilities:

- 'Champion' the project
- Provide specific business requirements and changes to the current state requirements
- Provide information and updates on current project management and capital project initiatives
- Ensure processes have enterprise-wide standards
- Provide documentation and support on current state processes and provide input to future state changes to processes
- Provide input, or access to project or subject matter expert resources
- Be part of PPM project team and provide advice and review of project deliverables
- Sign off on enterprise wide process designs

- Attend project status meetings

7.3.8. Manager Business Transformation

The role of the Manager of Business Transformation is to support the Project Director and Project Managers, and has the following key responsibilities:

- 'Champion' the project in EARG
- Provide EARG specific business requirements and changes to the current state requirements
- Provide information and updates on current EARG project management initiatives i.e. PMSP (MWH)
- Ensure a consistent process is designed for PPM
- Provide documentation and support on current state processes and provide input to future state changes to processes
- Provide input, or access to EARG project or subject matter expert resources
- Be part of PPM project team and provide advice and review of project deliverables
- Attend project status meetings

7.3.9. PPM Process Architect (TBD for Phase 2 and 3)

The PPM Process Architect is responsible for final approval of end-to-end PPM processes to be designed and enabled by the new PPM toolset. This is a full-time role during the project for an individual with a deep understanding of PPM processes, an appreciation of the requirement to meet enterprise and business unit needs, and has broad organizational credibility. The PPM Process Architect is the final arbiter for design related issues that occur over the course of the project.

While the PPM processes broadly cover the entire BC Hydro organization, a BC Hydro PPM Process Architect does not currently exist. The absence of a PPM Process Architect is an identified project risk in terms of managing change, realizing business benefits and maintaining project momentum. The project team will be seeking input from the Steering Committee with respect to filling this role.

7.3.10.Business Process Design Lead

The role of the Business Process Design Lead is to support the Project Director and Project Managers, and has the following key responsibilities:

- 'Champion' the project
- Use best practices for collection, analysis and documentation of business process
- Ensure consistent process is designed for PPM
- Provide documentation on current state processes and provide input to future state changes of processes
- Be an active member of PPM project team
- Identify and manage additional business process design resources as required
- Attend project status meetings

7.3.11. Change Management Specialist

The primary role of the Change Management Specialist is to support the Project Director and Project Managers, and has the following key responsibilities:

- 'Champion' the project

- Use BCH best practice tools and processes for collection, analysis and documentation of organization change management activities.
- Be an active member of PPM project team
- Identify and manage additional change management resources as required
- Attend project status meetings

7.3.12. Project Support

It is expected that a limited amount of support effort will be required during Phase 1, but will be required for subsequent phases. This role will be further defined for the next phase.

7.3.13. Other Project Roles (Phase 2 and Phase 3)

Other project roles will be added and defined in subsequent updates to the project charter for Phase 2 and 3.

8. Project Management

The PPM Project will follow industry standard project management protocols and the IT DSP methodology which may be supplemented by methodology from the implementation vendor.

8.1. Project Timeline & Deliverables

8.1.1. High Level Timeline

A PPM Project Schedule (MS Project) will be developed and updated throughout the project. This project schedule will follow standard project management methods including WBS, tasks, milestones, deliverables, signoffs and approvals, etc. The current high level Phase 1 version is attached as Appendix C. For future reference, current versions will be maintained on the PPM project SharePoint site.

8.1.2. Project Deliverables

A number of key deliverables have been identified for each phase of the PPM project and will be updated accordingly prior to each phase implementation.

Phase 1: Project Initiation Deliverables

- Project Charter and Governance Structure
- High level project schedule
- High level current state business process analysis
- High level organizational impact assessment
- High level business case (to be iterated in Phase 2)
- High level PPM solution footprint based on SAP as the default solution
- High level resource plan, schedule and cost estimate for Phase 2
- Project Initiation Phase Summary to support Stage Gate approval from the Steering Committee to move to the next phase.

Phase 2: Solution Verification

- Scripted SAP package demonstrations and solution due diligence

- Package fit assessment and recommendation
- Refined schedule of business requirements and future state solution definition
- Formal RFP for implementation services and associated vendor evaluation process
- Detailed implementation and change management plan for Phase 3 (based on several phases of implementation)
- Updated budget / business case
- Updated Project Charter
- Solution Verification Phase Summary to support Stage Gate Approval from the Steering Committee to move to the next phase.

Phase 3: Solution Implementation

- Signed contracts with preferred vendor(s).
- Updated Project Charter
- Project start-up for integrated vendor/BC Hydro implementation team
- New system infrastructure installed (hardware and software)
- System configuration
- Interface development
- Test plans and system testing
- Pilot implementation with smaller user group to refine solution configuration
- System and process training
- Cutover to new system
- Decommissioning of legacy systems

8.2. Project Change Control

In the course of a project, changes to the plan may be necessary for technical, business or financial reasons. Tasks may take more or less time and require more or less resources than originally planned. If changes arise, the Project Director must ensure that:

- the impact of the changes is analyzed and documented, communicated to the users, signed off by the users;
- technical risks are identified and reviewed;
- the effect on documentation, reports, user interface etc. is reviewed;
- the schedule reflects the changes;
- changes to the budget requirements are calculated;
- appropriate approvals have been obtained.

The "Project Change Request" form (Appendix B) will be used to formally request project changes. It is the Project Director's responsibility to ensure that the change is reasonable and that it meets with the appropriate approvals. In some cases the Project Director may have to strike a balance between the financial impact of a change and its requirement for project acceptance.

The Project Director will highlight changes by means of regular status reports to the Project Initiator, Sponsors and Project Steering Committee. Changes may affect the project's scope, schedule or budget or impact technical risk assessment. Where changes affect contracts with outsourcers or consultants, negotiations with the contractors should be conducted and the results clearly documented. The Project Director must submit a purchase requisition or change order to reflect the changes.

The Project Steering Committee must approve changes to the project work plan if they affect the scope. If the changes result in a budget increase, the Project Sponsors must approve the changes and an EAR Revision may be required. The EAR Revision must be approved at the level of the original EAR. Once approved, an EAR Amendment form must be forwarded to appropriate Financial Systems Department.

APPENDIX A – GLOSSARY OF TERMS AND REFERENCES

Acronym / Term	*Definition*
ACFO	Acting Chief Financial Officer
AV / VO	Annual Vacation / Vacation Overtime
BAT	Business Advisory Team is made up of business group representatives from across the organization.
BCH	British Columbia Hydro
BCTC	British Columbia Transmission Corporation
BI	Business Intelligence
Brio	A reporting software application. InfoPM currently uses Brio for reporting extractions.
Capital Plan	The list of approved proposals
CART	Capital and Risk Team
CCAR	Contract and Commitment Authorization Request (for contracts over $5M require CCAR)
CFO	Chief Financial Officer
CIO	Chief Information Officer
CPS	Corporate Policy Statement
CPO	Chief Procurement Officer
CR	Change request
CRO	Commercial Resource Optimization
CROW	Control Room Operating Window (used by BCTC to coordinate outages)
CSO	Chief Strategy Officer
Data Warehouse	A repository of data used storage and reporting.
EAR	Expenditure Authorization Request
EARG	New name of the three business groups that were combined to form one business group.
EBR (EDW)	Enterprise Business Reporting/Enterprise Data Warehouse
ECART	Executive Capital and Risk Team
ERP	Enterprise Resource Planning, a system that integrates data and processes of an organization into a unified system. ERP Systems typically attempt to cover all basic functions of an organization, regardless of the organization's business or charter.
ESP	Software used by EARG for Asset management.
FileNet	Documentation repository
InfoPM	Project cost management system software for planning, tracking, controlling and reporting project work used in EARG for Engineering and Project Delivery.
InfoTrac	Application in use in EARG, Engineering and Project Delivery for contracts and commitments management.
IT	Information Technology
IT&T	Information Technology & Telecommunications

Acronym / Term	Definition
MWH	Vendor retained by EARG to provide project management services for 3 large capital projects. MWH is a global provider of consulting, engineering, construction and management services in water, natural resources, and infrastructure sectors.
OCFO	Office of the Chief Financial Officer
OCIO	Office of the Chief Information Officer
P2P	The supply chain activities that an organization performs to support the ordering, receipt and payment of goods and services. Procure to Pay Project will identify and implement improvements in the process to purchase goods and services.
PassPort	Software application used for work management and inventory management
PD	Project Director
PM	Project Manager
PMBOK	Project Management Body of Knowledge
PMI	Project Management Institute
PMSP	Project Management Services Partnership project in conjunction with EARG and the vendor, MWH
Portfolio	A portfolio is a collection of projects or programs and other work that are grouped together to facilitate effective management of that work to meet strategic business objectives.
PPM	Project Portfolio Management
Primavera	Project scheduling software tool
Program	A program is a group of related projects managed in a coordinated way to obtain benefits and control not available from managing them individually.
Project	A Project is defined as a finite endeavor undertaken to create a unique product, service, or result having a specific start and completion dates which brings about beneficial change or added value. A Project has an assigned Project Manager and will follow some form of methodical project management approach to managing scope, schedule and cost.
Project Charter	Statement of the scope, objectives and participants in a project. It provides a preliminary delineation of roles and responsibilities, outlines the project objectives, identifies the main stakeholders, and defines the authority of the project manager.
Project Portfolio Management	Project Portfolio Management (PPM) is an integrated system for managing a project-based business and fundamentally changes the organization's understanding of managing projects. PPM is the practice of managing projects as investments and provides the management of project management processes and alignment with business goals.
Project Scope	Defines the project work breakdown structure and

Acronym / Term	Definition
	totality of work needed to complete the project. The project scope is the boundary that tells where the project begins and ends.
Proposal	An idea – usually recorded on the project fact sheet. Refers to ideas that are not yet part of the official Capital Plan.
ProSight	Portfolio management software
PSDP	Project and Service Delivery Practices in use in EARG
RIM	Records and Information Management Project
RFP	Request for Proposal - The method of soliciting competitive, solution-based responses from the vendor community for the purchase of goods or services, where the evaluation criteria include elements of subjectivity (e.g. Scoring/judging, weighting)
RFS	Request for Service
SAP	An Enterprise Resource Planning software package including modules for financial accounting, project costing, materials management, project portfolio management XPRM, Enterprise Portal, cProject Suite Collaboration Projects, Workflow, etc.
SC	Steering Committee
SharePoint	Team collaboration tool
SOO	Statement of Objectives(contract between Project Sponsor and Project Manager)
TBD	To be determined
TCM	FileNet component for managing documents with teaming focus
TRMS	Time Reporting Management System. Time tracking for project resources that use InfoPM to provide detailed time reporting.
UMS	Capital Project Prioritization software
WBS	Work Breakdown Structure
Work Management	Work Management generally refers to operate and maintain activities as well as smaller customer driven jobs that are generally currently managed within the PassPort Work Management System. A “job” in the context of Work Management is generally managed by a Field Foreman or Field Supervisor rather than by a Project Manager.
WMP	Work Management Project, refers to as ‘EARG’ Work Management Project as there is a project in Field Operations also called ‘Work Management Project’

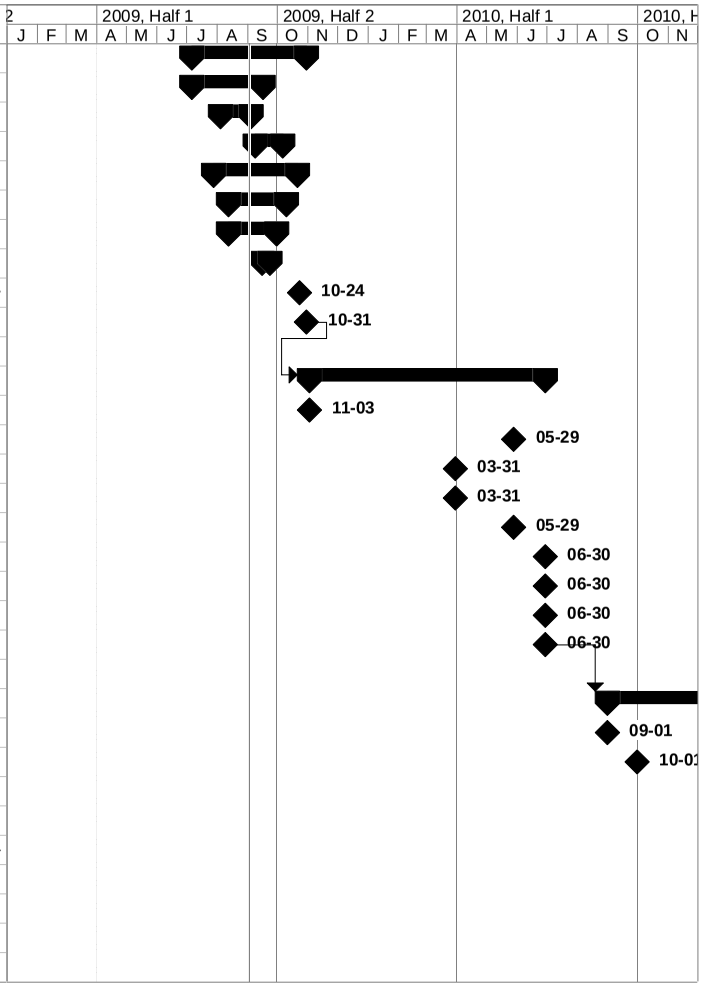
APPENDIX B – PROJECT CHANGE REQUEST FORM

Project Title:			**EAR #:**	
Project Phase:			**Date Issued:**	
Project Manager:			**Date Due:**	
Request Title:			**Request #:**	
Contractor Name:				
Reason for Change: **Prepared by:**				
Description of Change: **Prepared by:**				
Cost Amount: **Prepared by:**				
Ramifications:				
Overall Risk Impact: **Prepared by:**				
CIRCLE ONE: **Approved** **Rejected** **Cancelled**				
	Name	**Department**	**Signature**	**Date**
B.C.Hydro Signoff				
Contractor Signoff				

APPENDIX C – PROJECT SCHEDULE

AS AT SEPTEMBER 2, 2008

ID	WBS	Task Name	Duration	Start	Finish
1	**1**	**PHASE 1 - PROJECT DEFINITION**	**83 days**	**Mon 08-07-07**	**Fri 08-10-31**
2	**1.1**	**Project Initiation**	**51 days**	**Mon 08-07-07**	**Tue 08-09-16**
37	**1.2**	**Project Charter**	**23 days**	**Tue 08-08-05**	**Fri 08-09-05**
42	**1.3**	**Review SAP Solution Footprint**	**20 days**	**Tue 08-09-09**	**Mon 08-10-06**
45	**1.4**	**High Level Business Case**	**60 days**	**Tue 08-07-29**	**Tue 08-10-21**
52	**1.5**	**Business Processes**	**42.8 days**	**Wed 08-08-13**	**Fri 08-10-10**
57	**1.6**	**Organizational Impact Assessment**	**35 days**	**Wed 08-08-13**	**Tue 08-09-30**
61	**1.7**	**Phase 2 Planning**	**6 days**	**Tue 08-09-16**	**Tue 08-09-23**
65	**1.8**	**STAGE GATE APPROVAL**	**0 days**	**Fri 08-10-24**	**Fri 08-10-24**
66	1.9	**PHASE 1 COMPLETE**	0 days	Fri 08-10-31	Fri 08-10-31
67					
68	**2**	**PHASE 2 -SOLUTION VERIFICATION**	**171 days**	**Mon 08-11-03**	**Tue 09-06-30**
69	2.1	**Phase 2 Start**	0 days	Mon 08-11-03	**Mon 08-11-03**
70	2.2	**Future State Process Design Complete**	0 days	Fri 09-05-29	Fri 09-05-29
71	2.3	**SAP Package Fit Confirmation**	0 days	Tue 09-03-31	Tue 09-03-31
72	2.4	**RFP For Implementation Services Issued**	0 days	Tue 09-03-31	Tue 09-03-31
73	2.5	**Implementation Services Vendor Evaluation Complete**	0 days	Fri 09-05-29	Fri 09-05-29
74	2.6	**Business Case Approved**	0 days	Tue 09-06-30	Tue 09-06-30
75	2.7	**Implementation Plan Approved**	0 days	Tue 09-06-30	Tue 09-06-30
76	2.8	**STAGE GATE APPROVAL**	0 days	Tue 09-06-30	Tue 09-06-30
77	2.9	**PHASE 2 COMPLETE**	0 days	Tue 09-06-30	Tue 09-06-30
78					
79	**3**	**PHASE 3 - IMPLEMENTATION**	**477 days**	**Tue 09-09-01**	**Thu 11-06-30**
80	3.1	**Phase 3 Start**	0 days	Tue 09-09-01	Tue 09-09-01
81	3.2	**Signed Contract with Preferred Vendor(s)**	0 days	Thu 09-10-01	Thu 09-10-01
82	3.3	**New System Infrastructure Installed**	0 days	Tue 09-12-01	Tue 09-12-01
83	3.4	**System Configuration Complete**	0 days	Wed 10-03-31	Wed 10-03-31
84	3.5	**System and Process Training Started**	0 days	Mon 10-02-01	Mon 10-02-01
85	3.6	**Pilot Implementation Complete**	0 days	Wed 10-06-30	Wed 10-06-30
86	3.7	**Implementation Complete**	0 days	Sat 11-04-30	Sat 11-04-30
87	3.8	**Decommissioning of Legacy Systems Complete**	0 days	Thu 11-06-30	Thu 11-06-30
88	3.9	**PROJECT COMPLETE**	0 days	Thu 11-06-30	Thu 11-06-30



Inquiry of Expenditures related to the adoption of the SAP Platform
BCUC IR 1.18.1 Attachment 9

BC hydro

Project & Portfolio Management (PPM)

PROJECT CHARTER

Phase 2

May 25, 2009

Version 2.2

TABLE OF CONTENTS

APPROVALS **5**

1. EXECUTIVE SUMMARY **6**

2. PROJECT OVERVIEW **7**

2.1. PROJECT DESCRIPTION 7
2.2. KEY DEFINITIONS 9
2.3. BACKGROUND 11
2.4. CORPORATE IT&T STRATEGY 11
2.5. PROJECT KEY OBJECTIVES 13
2.6. PROJECT BENEFITS 13
2.7. STAKEHOLDERS AND FIRST NATIONS 15
2.8. PROJECT CRITICAL SUCCESS FACTORS 15
2.9. PROJECT GUIDING PRINCIPLES 15
2.10. MEASURES OF SUCCESS 17
2.11. KEY RISKS 18

3. PROJECT SCOPE **19**

3.1. ORGANIZATIONAL SCOPE 19
3.2. BUSINESS PROCESS SCOPE 19
3.3. TECHNICAL SCOPE 21
3.3.1. SAP Functional Scope 21
3.3.2. Other Technical Scope 21
3.3.3. Interface Scope 21
3.3.4. Data Conversion Scope 22
3.4. REPORTING SCOPE 22
3.5. OUT OF SCOPE 22

4. CONSTRAINTS AND DEPENDENCIES **23**

4.1. CONSTRAINTS 23
4.2. DEPENDENCIES 23
4.2.1. SAP Financial Replacement Project (FSR) 23
4.2.2. Other 24

5. PROJECT APPROACH **25**

5.1. OVERALL APPROACH 25
5.2. HIGH LEVEL SCHEDULE 25
5.3. DELIVERABLE GROUPS BY PHASE 26

6. PROJECT GOVERNANCE AND ORGANIZATION **27**

6.1. TEAM ORGANIZATION AND RESPONSIBILITIES 28
6.2. TEAM STRUCTURE 33

7. PROJECT MANAGEMENT **34**

7.1. PROGRESS REPORTING 34
7.2. SCOPE CONTROL 34
7.3. ISSUE MANAGEMENT 34
7.4. RISK MANAGEMENT 34
7.5. QUALITY ASSURANCE 34
7.6. PROJECT MANAGEMENT INFORMATION SYSTEM (PMIS) 35

8. BUDGET 35

APPENDIX A – GLOSSARY OF TERMS AND REFERENCES 36

Document Information and Revision History

Document Owner	Barry Reimer
File Name(s)	PPM Project Charter
Stored at	TBD
Original Author(s)	Barry Reimer, PPM Project Manager

Revisions:

Version	Date	Comments
Version 0.1	July 16, 2008	Initial draft table of contents for review with B. Reimer (P. Hamilton)
Version 0.2	July 20, 2008	Finalization of Table of Contents (P. Hamilton)
Version 0.3	Aug 6, 2008	Updated contents of document, including feedback from B. Reimer (P. Hamilton)
Version 0.4	Aug 11, 2008	B. Reimer edits
Version 0.5	Aug 12, 2008	Draft issued to Steering Committee for Review
Version 1.0	September 2, 2008	Final for Phase 1 including addition of Project Governance framework previously distributed as a stand-alone document, and feedback from Steering Committee members.
Version 1.1	September 10, 2008	Updated with final feedback from September 5th Steering Committee meeting.
Version 2.0	May 1, 2009	Updated for PPM Phase 2
Version 2.1	May 20, 2009	Updated to include May 11 Steering Committee feedback.
Version 2.2	May 25, 2009	Updated to include additional feedback from Don Stuckert.

APPROVALS

The project charter for the Project Portfolio Management project was completed initially as a deliverable for Phase 1 of the project which started in July 2008, and was approved by the Steering Committee in September 2008.

Approval of the Phase 2 Project Charter will be the initial contents of this Project Charter (version 2.2, dated 20090525).

Subsequent updates will be completed during the execution phase of the project, as required, after prior discussions and approval of the Steering Committee.

Role	*Name*	*Title*	*Signature*	*Date*
Project Sponsor	Chris O'Riley	Senior Vice President EARG		
Project Sponsor	Charles Reid	Executive Vice President and Chief Financial Officer		
Project Initiator	Diane McSherry	Director, Generation Project Delivery, EARG		
Steering Committee	Trish Pekeles	Chief Strategy Officer		
Steering Committee	Don Stuckert	Vice President & CIO		
Steering Committee	Roy Grout	Vice President Engineering, EARG		
Steering Committee	Brian Tabe	Director, Finance Field Operations		
Steering Committee	Gurj Parmar	Director Finance, EARG		
Project Manager	Barry Reimer	PPM Project Manager		

1. EXECUTIVE SUMMARY

The BC Hydro Project & Portfolio Management project (PPM) is an enterprise wide sustaining capital initiative that will provide a flexible, scalable solution to enable improvements in project, program and portfolio execution across BC Hydro.

The project is in response to BC Hydro management recognition that improvements to current processes and tools are required to efficiently manage BC Hydro's significantly increasing capital plan over the coming years.

The objectives of the PPM Project are to:

- Identify and refine foundational business processes so that **standard and efficient PPM practices** are enabled across the BC Hydro organization that will allow the effective delivery of the BC Hydro capital program at both a project and a program level.
- Align business process improvements to a business operating model that requires **clear accountabilities and responsibilities**
- Improve PPM reporting and scheduling so that **resources are managed more efficiently** and **projects are advanced in a predictable, timely and cost efficient manner**
- Identify and **implement new technologies consistent with the BC Hydro IT&T strategy** to enable the organization-wide project portfolio management processes
- Retire legacy applications where functionality has been replaced by new technology

The PPM project was designed to be executed in three phases:

Phase 1 – Project Initiation (complete).

The initial phase of the PPM project was to develop the framework for the project, including project charter and governance structure, performing an analysis of the current state, a high level solution footprint, gathering business requirements and developing the initial high level business case for project as well as a high level resource plan, schedule and cost estimate for Phase 2.

Phase 2 – Solution Verification (Blueprint)

The design phase is where the base "to-be" system and process design will be developed. The new process design for complex projects will be based on processes and practices that have been recently developed in EARG through Project and Service Delivery Processes (PSDP) and the Project Management Services Partnership (PMSP). Process will also be developed to allow for simplified project lifecycle runways for projects of lesser complexity, both within EARG and for other BC Hydro business groups so that the right process is used for the right purpose.

The system design will be based on the outcome of the SAP fit/gap assessment against defined EARG and BC Hydro requirements. While the design will initially be focused on EARG, other business groups will be invited to participate in order

to better understand the initial design and start to understand the implications for their home business group.

At the end of the design phase, the business case and budget will be updated to reflect a more detailed understanding of requirements, change implications, project schedule and required implementation resources. Actual implementation of the proposed solution will be dependant on final approval of the updated business case and project plan.

Phase 3 – Solution Implementation for EARG (Realization, Final Preparation and Go- Live)

The solution implementation phase for EARG will include final development of processes and detailed system design using an iterative prototyping process. Technical activities will include installation of a new development and production system infrastructure (hardware and software) in conjunction with the FSR project, as well as work in system configuration, interface development, development of test plans and system testing.

Finalization of the system and process designs will lead to development of training materials related to new processes and tools, as well as the detailed training plan for the first wave of implementation. It is anticipated that 2 waves of implementation will be required for EARG to move completely to the new processes and enabling technology, and other BC Hydro business groups would follow sometime thereafter.

This PPM Project Charter serves as the baseline reference document for the Project, against which all Change Requests will be assessed and measured. Taken together, the Project Charter and Change Requests will define the overall requirements, life, and measures of success for the project.

The Project Manager will be responsible for ensuring that work is aligned with the objectives and principles established under this document. Any update to the Project Charter must be reviewed and approved by the Project Steering Committee.

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2. PROJECT OVERVIEW

2.1. Project Description

Project & Portfolio Management (PPM) is an industry-wide term used by organizations to describe methods for analyzing and collectively managing a group of current or proposed projects as well as best achieving the organization's business or technical strategic goals.

BC Hydro has initiated a project to define and implement a solution for new project, program and portfolio management tools for all BCH business units that use such tools. The BC Hydro vision for PPM is to implement a common Project Management Lifecycle across all business units, enabled by a new set of PPM tools using a common data repository. The new tools should allow for flexibility in the detailed process design to meet the specific business requirements of any participating business unit, while still enabling roll-up and drill down reporting capability across BC Hydro, without manual intervention and significant administrative support. For individual users, the new

processes and tools should enable a clear understanding of their role in the project management lifecycle and guide them efficiently through day-to-day activities appropriate for their role, while ensuring that controls appropriate to their business unit and BC Hydro corporately are met.

As implementation of new processes and tools could ultimately impact over 800 employees in EARG, as well as other BCH customers, stakeholders and service providers, much emphasis must be placed on change management to ensure that the expected value from the tools and process change is delivered, and that training and support be provided to allow employees to effectively adapt to new tools and processes while continuing to deliver their committed work volumes.

It is also important to manage the overall implementation risk by appropriately staging the rollout across the various business groups with an understanding of the need for a timely implementation. For that reason, the initial organizational scope is EARG only, but the intent is to create base project management processes that can serve as the foundation for project management in any business group.

The BCH PPM project will be executed in three (3) major phases (the SAP ASAP methodology phase descriptions are shown within parentheses):

Phase 1 – Project Initiation (complete)

In this phase, the focus was to initiate the project, define scope and start the development of the business case. Key activities for this phase included:

- Verification of scope
- Establishment of project governance structure
- Creation of the initial project charter
- Defining a high level solution footprint and related high level conceptual future state business process
- Preparing a high level PPM business case for all of phases of the project
- Creating a schedule, cost estimate and resource plan for Phase 2.

Phase 2 – Solution Verification (Blueprint)

The second phase will include detailed solution assessment and planning activities:

- Project start-up with Phase 2 team.
- Establishment of an SAP sandbox environment
- Complete a detailed SAP fit assessment against known requirements to document specific future state processes for EARG
- Refinement of the business requirements
- Refinement of resource plan and Project Charter update
- Creation of a detailed implementation and change management plan (based on two waves of implementation for EARG)
- Update of the PPM Business Case and project plan
- Presentation of the recommended solution and business case to the Steering Committee for Stage Gate Approval to move to the next phase.

The solution requirements include components covering cost management, project management & scheduling, resource management, document

management and reporting which will drive the selection of the best system.

Phase 3 – Solution Implementation (Realization, Final Preparation and Go- Live)

The solution implementation phase will include activities for a standard, phased implementation of the solution defined in Phase 2, and will include:

- Project start-up for implementation team
- Installation production system infrastructure (development, test and production hardware and software)
- System configuration
- Interface development
- Development of test plans and system testing
- Phased implementation (Wave 1 & 2 for EARG)
- System and process training (change management)
- Cutover to the new system
- Decommissioning of any related legacy systems that have been fully retired.

2.2. Key Definitions

One of the early challenges with the PPM project is have a consistent definition of terms related to project management that are in common use, but do not necessarily have the same meaning for every individual or every context. For that reason, those commonly used terms are defined here to provide more clarity for all project team members and stakeholders.

PROJECT MANAGEMENT - Project Management is the application of knowledge, skills, tools and techniques to project activities to meet project requirements and to ensure that a project fulfills the business requirements and is on time and on budget. Management and scheduling tools help the process, together with regular reviews of progress and risks to ensure specific project goals and objectives are met.

Projects need to be performed and delivered under certain constraints. Traditionally, these constraints have been listed as "scope," "time," and "cost". These are also referred to as the "Project Management Triangle," where each side represents a constraint. One side of the triangle cannot be changed without affecting the others. A further refinement of the constraints separates product "quality" or "performance" from scope, and turns quality into a fourth constraint.

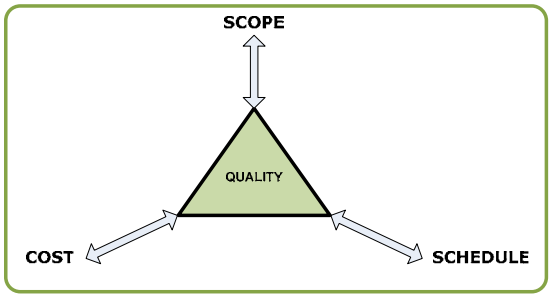

Figure 1 – Project Management Triangle

PROJECT - A Project is defined as a finite endeavor undertaken to create a unique product, service, or result having a specific start and completion dates which brings about beneficial change or added value. A Project has an assigned Project Manager that will follow some form of methodical project management approach to managing scope, schedule and cost.

PROGRAM - A program is a group of related projects managed in a coordinated way to obtain benefits and control not available from managing them individually. Programs may include elements of related work outside of the scope of the discrete projects in the program. Examples of programs within BC Hydro would include the vegetation management program in field operations, and the Power Smart marketing programs.

Program Management is the centralized, coordinated management of a group of projects to achieve the program's strategic objectives and benefits.

PORTFOLIO - A portfolio is a collection of projects and/or programs that are grouped together to facilitate effective management of that work to meet strategic business objectives.

The projects or programs in a portfolio may not necessarily be interdependent or directly related. Examples of portfolios in BC Hydro include the portfolios of generation projects in EARG (Portfolio A, B, C & D) as well the portfolio of IT projects managed by the OCIO.

For further clarity, the relationship between projects, programs and portfolios to be used for the BC Hydro PPM project is shown in Figure 2 below.

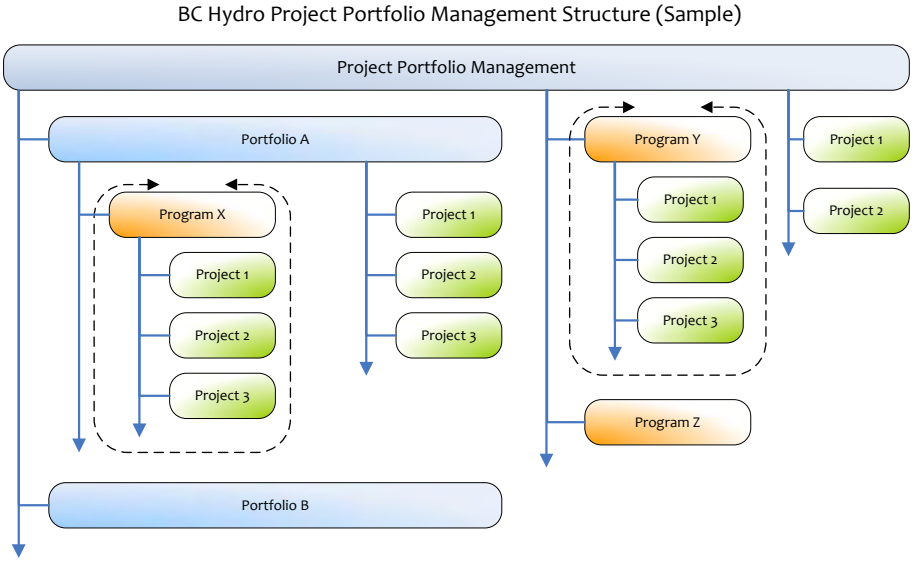

Figure 2 – Relationship Between Portfolios, Programs and Projects

PROJECT PORTFOLIO MANAGEMENT (PPM) - is an integrated system for managing a project-based business. It is often referred to as the next generation of project management as it fundamentally changes the organization's understanding of managing projects.

PPM is the practice of managing projects as investments and provides for the management of project management processes and alignment with business goals. PPM also measures available resources, such as time and cost, against all the proposed projects and applies consistent methodology and tools to align them with the goals of the business. It also describes methods for analyzing and collectively managing a group of current or proposed projects based on numerous key characteristics.

The fundamental objective of the PPM process is to determine the optimal mix and sequencing of proposed projects to best achieve the organization's overall goals - typically expressed in terms of hard economic measures, business strategy goals, or technical strategy goals - while honoring constraints imposed by management or external real-world factors.

2.3. Background

BCH corporately has recognized that current Project Portfolio Management (PPM) processes and tools are not adequate for current and future project delivery requirements across the organization.

The inconsistency in project controls, reporting, document management processes and tools introduce project risk for projects of all sizes. There is a management concern that Project Managers and their delegates spend too much time working inefficient systems, creating manual reports, and moving documents through manual approval processes, which would be better focused on project quality, value and safety.

2.4. Corporate IT&T Strategy

The key principles from the recently approved BCH IT&T Strategy that will drive the PPM project are:

- **Business Strategy Drives Business Process design**

  The business strategy and objectives drive the business process architecture. They define the metrics to which the processes must deliver to. Conservation results, cost efficiencies, operable efficiencies, and maximizing the team metrics must be enabled by the business process and technology.

- **Business Process is defined both in terms of Enterprise and Line of Business**

  Each business process can be defined as meeting enterprise and BG needs. They can have different levels of design ranging from 100% BG driven to 100% enterprise driven base upon what meets the needs of the enterprise **and** BG. When analyzing our business processes, we will define how much affects the enterprise and the business group. For example, an employee expense process might be 100% enterprise designed whereas a work scheduling process might be 60% the same across the enterprise and 40% specific to a business group.

- **End to End Business Process Design**

  Each business process will be looked at from "source' to "source". For example, end customer self service is integrated into the process so information is delivered, processed at source of creation.

- **Business Process Design Drives the IT&T Strategy**

  The cross functional business processes designed for the future business drives the development of the IT&T architecture. The IT&T architecture includes: user access, applications, information/data, infrastructure and telecommunications.

- **80/20 Rule**

  Deliver solutions that will meet 80% of the business process needs. While we seek a very high quality of solution, we know that customer need, time and dollars must be met.

- **Design for "Tool Time"**

  Most business processes have a "transactional" nature to them. Most of the transactional processing can be enabled by technology. This will free up our team to spend time on getting the job done and on knowledge-based work.

- **Single Source of Information**

  Incorporate single source of "truthful" information. We may replicate that data in order to be to meet business process needs but will stand behind a single truth.

- **Test & Validate Current IT&T Investments**

  Test and validate the current IT&T investments first to solve the business process needs. In the event that the current IT&T architecture cannot deliver to the business needs in an effective and efficient way, we will look to buy/obtain proven technologies. We will leverage "bleeding edge" technology only in an applied R&D environment.

- **Short and Long Term Strategic investments**

  In order to keep operating and improving the business it is necessary to implement incremental improvements. These would be considered short term improvements that would be implemented and have paybacks attained in 1-3 years. They may be replaced by the longer term strategies in the 3+ year's time frame.

- **Consistent and Effective Governance**

  Overall governance of the IT&T investment ensures we utilize the resources in the most effective manner for the overall organization. Having a governance structure to set priorities, oversee the allocation of resources in order to provide full time project resources, address the interdependencies of the project work and provide oversight to the operations provides a foundation for success.

2.5. Project Key Objectives

The key objectives of the PPM project are to:

- Identify and refine foundational business processes so that **standard and efficient PPM practices** are enabled across the BC Hydro organization that will allow the effective delivery of the BC Hydro capital program at both a project and a program level.
- Align business process improvements to a business operating model that requires **clear accountabilities and responsibilities**
- Improve PPM reporting and scheduling so that **resources are managed more efficiently** and **projects are advanced in a predictable, timely and cost efficient manner**
- Identify and **implement new technologies consistent with the BC Hydro IT&T strategy** to enable the organization-wide project portfolio management processes
- **Retire legacy applications** where functionality has been replaced by new technology

2.6. Project Benefits

PPM project benefits have been identified in several key areas of BCH operations. The benefits outlined below include a variety of tangible and intangible sources, but the current systems and processes do not support a baseline for conducting supportable quantitative analysis.

- Resource Management and Productivity:
  - Improved processes will allow more efficient project delivery. The increased productivity will allow BCH to execute a higher capital spend per $ of resource dedicated to capital projects.
  - 'Real time' visibility into resource capacity and project forecast requirements will enable improved resource utilization and easier identification of skills shortages.
  - Consistent processes and enabling technology will reduce complex and redundant reporting and should eliminate duplicate data entry.
  - Reduced overall effort for project administration and control.
  - An improved Funding and Approval Process will significantly decrease the time for project related approvals. This process can ultimately be managed completely within the envelope of SAP workflow capability which can ensure the timely flow of approvals through appropriate approvers and their delegates if the primary approver is not available.
  - New PPM capabilities for BC Hydro such as integrated document management, resource management and automated workflows will improve productivity. Workflow coverage could be end-to-end in SAP once P2P functionality is ported to SAP from PassPort and HR/Pay is moved from PeopleSoft.

- Reduced Project Risk:
  - Timely, consistent, and accurate project information will support earlier identification of issues and better decision making by project managers and executives at all stages of the project life cycle. This will ultimately reduce the risk of cost and schedule overruns. The SAP Financial Systems Replacement (FSR) project currently underway will be directly and seamlessly interfaced to the PPM solution which will provide more reliable financial accountability for projects.
  - Consistent processes and better PPM tools will reduce project administration effort and will allow project managers to focus on quality and risk mitigation.
  - Implementation of a more homogeneous enterprise PPM solution in SAP will significantly reduce the integration risk that exists with existing PPM systems.
  - The current infrastructure for InfoPM, InfoTrac and TRMS is aging and risk of failure is increasing. Any failure of existing PPM systems would have significant negative impact to projects underway, particularly in EARG due to the number, size and complexity of projects underway. Implementing new infrastructure now should also result in avoided replacement and upgrade costs for InfoPM, InfoTrac and TRMS.
  - Reduced risk associated with current integration between PPM systems, (example: PeopleSoft←→ InfoPM, InfoPM←→ TRMS, PassPort→InfoPM, etc.). Outsourcer support for existing integrations is limited, with frequent changes in personnel, and changes are costly.
- More accurate project estimation by leveraging historical estimates vs. actual information and using a consistent process.
- Provides a single data source for all transactions (the exception at time of initial go-live is PassPort related data until P2P and work management functionality is converted to SAP).
- Provides a more homogenous technology platform for users, with consistent field naming conventions and data definitions. Provides a common look and feel for technology across the entire PPM lifecycle.
- SAP provides the flexibility to allow different paths through the PPM lifecycle without implementation of separate instances of the software. It also fully integrates with other commonly used project management tools such as Microsoft Project and Primavera that will still be used for some projects going forward.
- Reduced cost of ongoing technology sustainment as more functionality is contained within a homogenous SAP environment and legacy applications will be retired. InfoPM currently requires significant hardware and software upgrades just to keep it operational. It is anticipated that these costs can be avoided if new PPM technology is implemented in the near term.
- Process and enabling technology improvements will positively impact overall project schedules, and reduce risk of project slippage. Any reductions in project slippage potentially reduce costs in the following areas:
  - Cost avoidance related to contract labour and escalation in material & services
  - Reduced internal labour hours
  - Reduced carrying costs for IDC and Capital OH
  - Schedule slippage for generation projects directly related to supply may also impact revenue for BC Hydro. While the impact is not consistent to every

project, and varies depending on available capacity and time of year, the potential impact can be significant.

- Improved Regulatory and Auditor Credibility. Improvements in planning and management of projects will increase credibility with the regulator and external auditors.

2.7. Stakeholders and First Nations

The key external stakeholder impacted by this project is the British Columbia Transmission Corporation (BCTC), both as a customer for engineering and field services, and as a service provider in managing substation distribution assets. Other contractors providing services to BC Hydro projects will also be impacted by process and technology changes, with specific impacts to be determined as the PPM project evolves.

There are no known or anticipated First Nations impacts at this time.

2.8. Project Critical Success Factors

Key critical success factors for PPM include:

- Broad user acceptance of the new technology and process changes
- Appropriate integration with other related initiatives
- Visible and measurable improvements in project, program and portfolio delivery related to:
  - Productivity
  - Quality
  - Resource planning
  - Cost Management
- Standardized tools and processes with a common data repository for reporting and monitoring
- Decrease in project delivery risk.

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2.9. Project Guiding Principles

The following are the project principles that will guide the project team through each phase of the project:

- Implement simplified and standardized processes
  - Eliminate redundant, duplicated work and data reconciliation activities
  - Implement simpler, standard, and consistent processes
  - Design processes that are both scalable and sustainable
  - Utilize single source data repositories and “enter once” principles to enable data confidence and accuracy

  - Balance the financial reporting needs with the ease of executing the process
  - Be practical; keep the 80/20 rule in mind and avoid developing perfect processes; do what is necessary and sufficient
  - Look for quick wins in process improvements that could be implemented in advance of the enabling technology.

- Implement a transparent control environment
  - Build risk-based controls rather than requiring extensive reviews and approvals
  - Embed control mechanisms that are efficient, effective and reinforce the right behaviors

- Provide people the ability to more easily access the information they need
  - Provide a common data repository and build standard reports using Business Intelligence principles and avoiding the use of “data dumps”
  - Provide reports that are accessible to all users and do not require specialists to execute
  - Implement a toolset that supports the business but does not try to replace good management practices or sound decision making
  - Provide visibility of key information throughout the process for all types of work

- Improve productivity
  - Increase efficiencies and lower the costs of getting work done by reducing manual reporting and data reconciliation efforts

- Leverage technology
  - Take advantage of the capabilities that BCH already has but do not presently use
  - Recognize that BC Hydro is not unique and use the applications as they were intended.

- Incorporate BC Hydro Values
  - Ensure the new process is aligned with BCH values of safety, service, integrity and accountability
  - Design processes that provide clear accountabilities and support cross-functional teamwork
  - Balance the Triple Bottom Line elements of Cost, Social Responsibility and the Environment

- Manage the Business Change
  - Use proven methodology and techniques to support the business through the change process
  - Collaborate with stakeholders and ensure employee engagement with the project and the new processes
  - Provide visibility into how the solution fits within BC Hydro’s broader vision and plans
  - Provide effective change management resources and deliver a targeted, sustainable, blended learning approach

2.10. Measures of Success

Project Success

The Design Phase of PPM Project will be considered successful when:

- We achieve an appropriate balance between project risk, business risk and business value for the PPM project.
- The Business Advisory team has reviewed and provided feedback on the Business Process Design.
- The implementation Phase (PPM Phase 3) business case, preliminary solution design and project plan is submitted for approval by June 30th 2009.
- The preliminary solution design, project plan and team structure enables the project to deliver the highest magnitude of benefit with a targeted timing to benefit that aligns to the April 1st 2010 FSR go-live.

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Functional Success

The PPM project will be considered successful when:

- A consistent governance model and a supporting technical solution have been extended to the balance of projects.
- Standardized processes have been rolled out in EARG and standardized accurate reporting is being delivered at a program, project and portfolio level.
- The existing Manual GCCR process has been eliminated and replaced with SAP as the one source of the truth.
- There is capability to roll-up resource loaded schedules for all projects.

Business Success

The PPM Project will be considered successful when 4 months after go live:

- The PPM Project has not negatively impacted the advancement of current projects
- Systems and processes are stable
- Employees are performing their roles as designed
- All material issues are addressed
- Capabilities are delivered as designed
- There is a foundation in place for project, program and portfolio management that can be easily extended to the rest of BC Hydro.

The PPM Project will be considered successful when 12 months after go live:

- There are visible improvements in productivity.

Technical

The PPM project will be considered successful when:

- The best technology, consistent with the IT& T strategy and architecture, including SAP, SharePoint and FileNet, has been used as default components of the solution architecture to support the business processes and reporting needs.

- Scheduling tools required in addition to SAP have been interfaced with SAP (MS Project and Primavera).
- InfoPM has been replaced
- TRMS has been decommissioned (to be confirmed)
- InfoTRAC has been decommissioned (to be confirmed)
- GERT has been decommissioned (to be confirmed)

2.11. Key Risks

A number of key risks for the PPM project are to be monitored and appropriate risk mitigation strategies will be developed as required.

Current identified key risks include:

- *Change Management:* Implementation of a new PPM processes and tools will require a significant change management effort across a large base of staff. In the early stages of the project, there is potential for conflict between the IT&T strategy with SAP as the default solution, and the ability of SAP to meet the perceived or actual needs of the business. It is also important to make sure that business groups that are lighter users of PPM processes and tools are not completely overshadowed by the heavier users.
- *Project Resources*: This project requires full-time resources with a deep understanding of project and portfolio management processes and tools at BC Hydro, as well as solid technical expertise with existing legacy systems and interface and SAP. Availability of skilled and knowledgeable project resources, both internal to BC Hydro and with ABSU, will impact project execution.
- *Dependency on Related Projects:* There are several other projects such as the Financial System Replacement project (FSR) and other major EARG projects that may have a direct impact on PPM design, scope, project resource availability and implementation schedule.
- *Scope*: The scope of this project is very large, with many touch points to other processes and tools, and it may be a challenge to limit PPM scope to those interfaces.
- *Schedule*: The broad scope of the PPM project, the training required for a large user community and the dependencies on related business and technology initiatives may limit the scope of the functionality rolled out for the first wave of implementation.
- *Sponsorship Focus*: There are several other significant corporate initiatives currently in progress at BC Hydro, and maintaining the focus and participation of the project sponsorship and senior executives throughout the project life cycle may be a challenge.
- *Business Risk*: Inability to deliver capital projects on time and budget will likely directly impact BC Hydro's commitment to meet asset reliability requirements.

A more comprehensive list of project risks and mitigation strategies is contained in the project risk register.

3. PROJECT SCOPE

3.1. Organizational Scope

As outlined in the PPM business case, the primary focus of this project is EARG. Other business groups will be invited to participate in the design reviews through participation on the Business Advisory Team, as it is anticipated that the solution will eventually become an enterprise-wide solution.

3.2. Business Process Scope

The business process scope will include the corporate view of project, program and portfolio management with inputs from current business unit standards including the Project and Service Delivery Processes (PSDP) and the Project Management Services Partnership (PMSP).

The high level processes related to Project, Program and Portfolio Management considered to be in scope are outlined in Figure 3 and defined below. The project lifecycle depicted in Figure 3 is representative of the large and most complex projects in BC Hydro. Simplified process runways for projects of medium and low complexity will be developed in Phase 2. This work will be led by consultants from MWH working with representative subject matter experts from EARG.

Projects in process and new projects will be converted to the new business processes and enabling technology. It is anticipated that process training could be initiated in advance of the technology training.

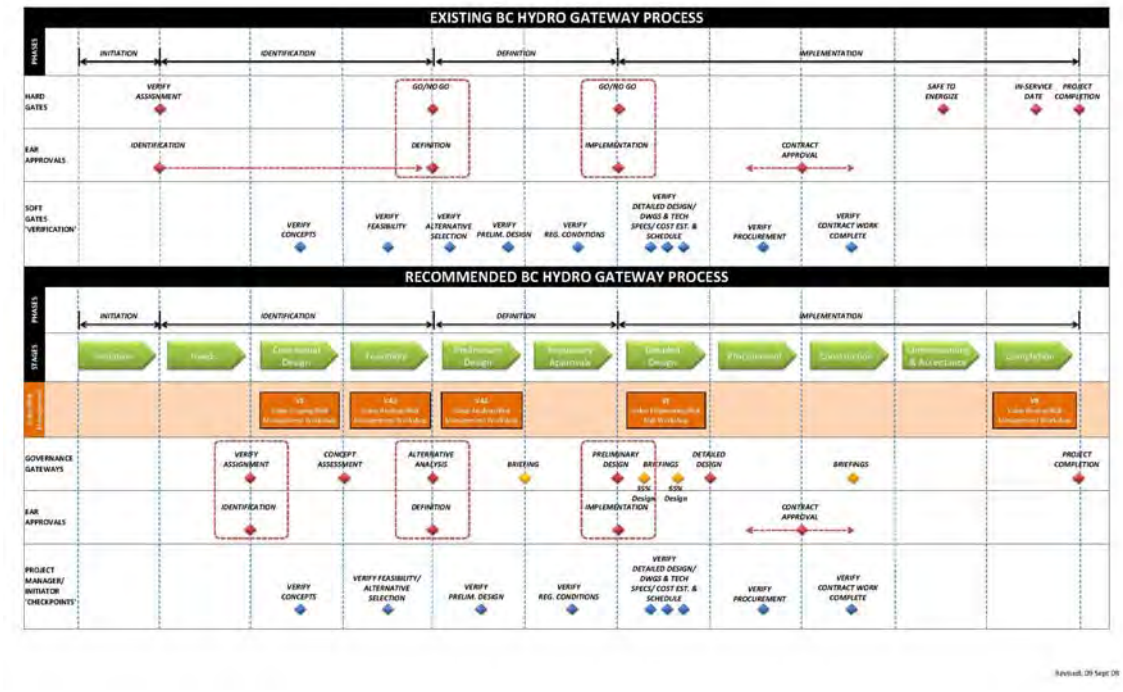


Figure 3 – PPM Process Scope

CAPITAL PLANNING

The annual corporate strategic plan and capital project planning cycle are reviewed and updated on an annual basis. During this process an evaluation of major capital projects or corporate initiatives is derived from the business operations and IT&T strategic plans and a formal identification of capital projects, programs and portfolios is completed across the organization. The planning process provides input to the PPM processes. Any changes to the BCH capital planning process are considered to be out of scope for the PPM project as by itself is a large and complex process, and would require a dedicated project team to appropriately analyze and address any changes.

INITIATION

The project initiation process refers to the activities related to starting up a project.

IDENTIFICATION

This would potentially include performing a needs assessment, documenting a business case, creating a conceptual design, conducting a feasibility study, creating terms of reference and a project charter, the appointment of Project Sponsors, project team and project management activities related to setting up a project office.

DEFINITION

The definition phase includes the gathering of business and technical requirements, preliminary design, detailed planning and estimating activities for all aspects of the project, including a roadmap for the project by creating the following: definition of roles and responsibilities; resource estimates; project budget; project schedule; change management plan; quality plan; communication strategy and implementation plans. Any regulatory approvals are part of the definition phase.

IMPLEMENTATION

The implementation phase will vary depending on the asset being built, but includes the execution of tasks related to the deliverables of the project through to completion. It will typically include detailed design, procurement, construction, commissioning and acceptance, and all completion activities. The asset is available, tested and in a 'ready state' for all business, technical and supporting departments. The project deliverables, processes and activities have been incorporated into the ongoing business and technical environments.

POST IMPLEMENTATION

The Project Deliverables have been transitioned to the business unit and support functions. Subsequent support, sustainment, and warranty management activities are included in this phase. The PPM processes provide input to post implementation activities, but otherwise these activities are considered to be out of scope for the PPM project.

3.3. Technical Scope

3.3.1. SAP Functional Scope

The project scope includes the implementation of the SAP components required to replace the functions currently performed in InfoPM and to replace existing manual processes. Based upon the work performed during the Phase 1, the SAP components in scope are:

- Project Systems (PS)
- Resource and Portfolio Management (RPM). This includes the use of SAP Portal for RMP as the primary interface to RPM functionality.
- cProjects (gating and approvals)
- Business Intelligence (BI, sometimes referred to as BW)

3.3.2. Other Technical Scope

The following tools currently in use at BCH are to be reviewed for inclusion or replacement as part of the PPM project scope:

Possible Replacement	Inclusion
InfoPM	Primavera P6
TRMS	MS Project
InfoTrac	SharePoint
ESP	FileNet
	mPDS, mProve
	mPrism (to be evaluated)

Additional technical items that are considered in scope for the PPM project include applications, hardware and middleware. At the present time there have been no identified impacts to telecommunications at BCH.

3.3.3. Interface Scope

The primary interfaces in scope for PPM are:

- Primavera to SAP. It is anticipated that Primavera will be integrated using Impress, a proven integration tool between SAP and Primavera.
- PassPort to SAP. A new interface or an extension to the SAP / PassPort interface will be required for commitment data which is out of scope for the FSR project.
- If it is determined that mPrism is required, an interface to the mPrism data mart (SQL Server) would be required.

It is not in scope to redesign or change the legacy systems to which SAP will connect. It is assumed that the SAP interfaces will utilize the data as it is currently provided by these systems and in turn will provide data in an equivalent format to these systems if required. This represents a considerable risk to the project as the current data structures may not fully support the new processes designed as part of the project. This risk will be managed via the project Risk Management process.

3.3.4. Data Conversion Scope

It is intended that only Info PM data for projects in-progress would be converted to SAP.

It is not in scope to convert any historical data into the SAP ECC6 system, or to manually cleanse or "clean-up" any data prior its conversion into SAP ECC6, as this is the responsibility of the business. Since this represents a risk to the project, so the project will establish management procedures to coordinate and track data clean-up activities.

3.4. Reporting Scope

The reporting scope of the project includes standard project management reporting and configurable dashboards from SAP PS, RPM and Business Intelligence (BI) based on the key themes of scheduling, costing and governance for projects, programs and portfolios. Reporting analysis will include input from previous initiatives in 2007 and 2008 by the EARG Capital Business Reporting team and PSDP.

It is not in scope to migrate any enterprise data warehouse reporting to SAP BI, or to consolidate any of this data into SAP BI. For example, P2P reporting currently delivered via the COGNOS enterprise data warehouse will not be brought into SAP BI as part of this project.

3.5. Out of Scope

Primary functional activities deemed out of scope for the PPM project are:

- Capital Planning processes for all business units.
- Post Implementation operate processes related to Asset Management (Sustainment, Support, Warranty), and Asset Accounting.
- Field Operations and Generation Work Management as currently done in PassPort. Work Management generally refers to operate and maintain activities as well as smaller customer driven jobs that are generally managed within the PassPort Work Management System. A "job" in the context of Work Management is generally managed by a Field Foreman or Field Supervisor rather than by a Project Manager in Distribution Engineering.
- Replacement of the Work Management System (PassPort, DAD, etc).
- Organizational structure redesign.
- A complete redesign of Project and Service Delivery Practices (PSDP) is out of scope, however the development of project lifecycle runways for projects of varying complexity (e.g. small/medium/large or low/medium/high) is in scope.

The following tools currently in use at BCH are to be out of scope for the PPM project and will be not reviewed for replacement or integration:

MS Word (other than use as a PPM tool)	PassPort – will not be replaced, but additional integration may be required.
PeopleSoft Financials and project costing and integration to SAP (replaced by SAP and FSR project)	Heavy Bid (EARG estimating)
CRO, DAD	FileNet integration to SAP (FSR) and SharePoint (part of another OCIO initiative)
Integration to BCTC Oracle (part of FSR scope)	Drawing Management

Anything else not specifically identified as being in scope is considered to be out of scope.

4. CONSTRAINTS AND DEPENDENCIES

This section outlines the key external constraints and dependencies that may impact this project and its ability to be completed successfully. Each item represents a risk to the project, and will be tracked and managed through the project Risk Management Plan.

4.1. Constraints

1. Due to the dependency on the SAP functionality to be delivered by the FSR project, the project cannot go-live before April 1, 2010, the targeted go-live for FSR.
2. Because the scope of the project does not include making changes to the existing legacy systems that will interface to SAP (most notably PassPort), it is quite likely the solution design will be constrained by the current legacy system designs. As specific items are identified where this is the case, they will be managed as issues and escalated to the Steering Committee.
3. The Project Management practices for the project will need to align with the IT Development Standard Process (IT DSP).
4. The Change Management practices for the project will need to align with the standard Enterprise-wide Change Management Network practices.
5. The existing Project and Service Delivery Practices (PSDP) and related documented processes will be taken as a starting point for this project with the objective of implementing a “One Hydro” view of Project Portfolio Management that will support the needs of individual business groups.

4.2. Dependencies

4.2.1. SAP Financial Replacement Project (FSR)

The key dependency for PPM is the FSR project. The FSR project is an exercise in implementing financial process improvement to meet the International Financial Reporting Standards requirements for BC Hydro to be performed in SAP. The project includes all financial processes as well expense reporting, but not time entry.

The risks to the PPM project include:

- Overlapping configuration in the Project System (PS) module by FSR that conflicts with or precludes required functionality for PPM. This could limit the benefits to PPM or require reconfiguration in the future. Other organizations implementing SAP without appropriate consideration of the longer term implications and organizational requirements have experienced poor acceptance of the system and have had to undergo another implementation cycle to reconfigure and retrain their staff.
- PS configuration required by PPM is deemed to be too risky to the FSR schedule for an April 1, 2010 go-live and is pushed off to a future date.

4.2.2. Other

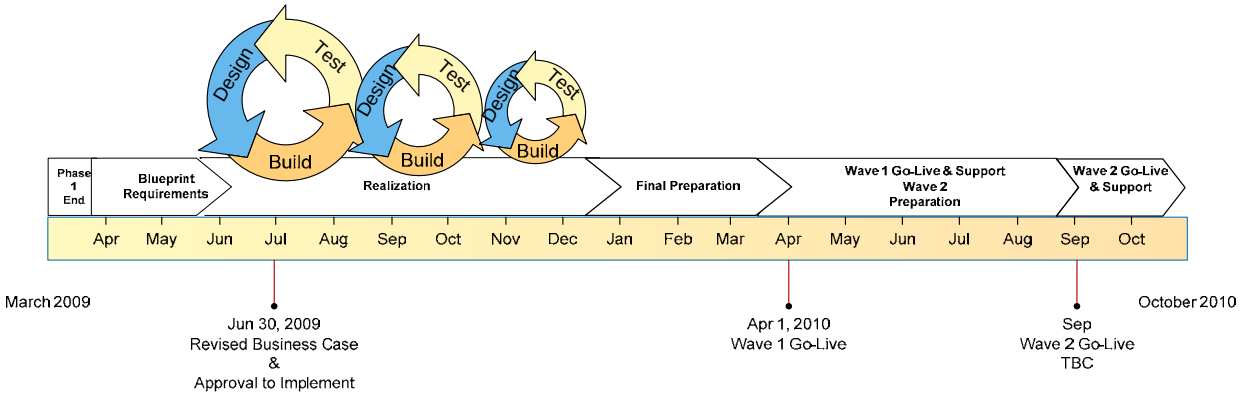
Project Management Services Partnership (PMSP)	Tools and processes from PMSP to be used as input to PPM are still not in complete production and as a result there are still risks that processes and tools will not perform as expected and will impact PPM.
Enterprise Service Bus (ESB) Program	The OCIO has a program underway to select, deploy, and operate a standard set of system integration tools. Ideally, interfaces developed for this project will utilize this new technology and will be developed through a new organizational group.
Customer Care Initiatives and Sustainment	As the Financial Systems Replacement project proceeds, there may be changes required to the base Customer Care configuration, and these need to be coordinated to not disrupt existing processes.
Procure to Pay (P2P)	The new processes being developed through PPM will rely heavily on the new supply chain processes being developed by the P2P project for the requisitioning, delivery, payment, and cost tracking of capital materials and services. It will be necessary to ensure the two process design exercises are aligned to ensure the overall objectives of both will be met, but as P2P is going live in April 2009, the impact should be manageable.
Records and Information Management Project (RIM)	A corporate project sponsored by Ray Aldeguer to improve access and maintenance of critical documents across BC Hydro.

5. PROJECT APPROACH

5.1. Overall Approach

The project will generally follow SAP's ASAP methodology for the implementation phase of the project. The ASAP methodology will be supplemented with specific best practices based on the external consultants experience and adjusted where necessary to fit within the existing OCIO and corporate Change Management standards.

The project will be executed following the standard five ASAP phases as per the following diagram. The diagram also shows approximately how the standard IT DSP gates will map to the project phase.



5.2. High Level Schedule

The targeted project milestones are as follows:

Phase	Milestone Start	Milestone End
1. Project Preparation	March 1, 2009	May 15, 2009
2. Detailed Blueprint	March 30, 2009	June 30, 2009
3. Realization	July 1, 2009	December 31, 2009
4. Final Preparation	January 1, 2010	March 31, 2010
5. Go Live and Support (Wave 1)	April 1, 2010	June 30, 2010

5.3. Deliverable Groups by Phase

The major groups of deliverables that will be produced in each phase are outlined in the following table. The specific deliverables that will be produced within each group is detailed in the project work breakdown structure (WBS) and will be refined prior to the execution of each phase.

Project Phase	Deliverable Groups
1. Project Preparation Phase	• Updated Project Charter • Project Plans • Assembled project team • Prepare project facilities • Hold project kick-off • Provide core team training
2. Detailed Blueprint Phase	• "As-is" process documentation • Key Decisions • "Level 2" process designs • Master data / organizational design • Reporting requirements • Functional specifications for development • Technical plans • Change management and communication strategy • Impact assessment and training needs assessment • Realization Phase detailed plans • Finalized Business Case
3. Realization Phase	• Baseline SAP configuration • "Level 3" process designs • Final configuration and unit testing • Technical developments • End user documentation (Level 4) • Detailed impact assessment • Training plan & materials • Authorizations development • Gap analysis & business transition plans • Cutover planning • Final prep detailed plans
4. Final Preparation	• Regression testing of existing systems • System performance testing • User acceptance • Training delivery • Execution of transition plans • Cutover preparation and test execution • Cutover execution

Project Phase	Deliverable Groups
	• Detailed Go-live and Support planning
5. Go-live and Support	• Initial production support • Completion of transition plans • Transition to sustainment • Project closure

6. PROJECT GOVERNANCE AND ORGANIZATION

The following section outlines the project structure, roles and responsibilities with regard to how the project will be governed and how key decisions will be made and approved. As outlined in Figure 4 in section 6.2, the Project Organization has five overall bodies: Sponsorship and Steering Committee, Project Management Team, Core Project Team, Subject Matter Experts, and Business Advisory Team. The general role of each with regard to governance and decision making is outlined in the following table, and the description of individual roles and responsibilities is outlined in section 6.1.

Project Body	Governance / Decision Making Role
Sponsorship and Steering Committee	• Provides the mandate to the Project Management Team to deliver the project per the items defined in this charter • Ensures the appropriate Project Governance procedures and practices are in place and are followed through-out the project • Receives periodic updates from the Project Manager on the progress and status of the project • Receives periodic updates from the Quality Assurance Lead as to the effectiveness of project management, governance, and quality assurance activities • Makes changes as necessary to the project governance structure to best ensure the successful outcome of the project • Supports the effective execution of the project by empowering the Core Project Team to make design decisions • Review “key” decisions, and approve design decisions involving organizational changes, submitted by the Core Project Team • Makes design decisions where the Core Project Team is unable to do so or where the feedback from the Business Advisory Team is in conflict with decisions made by the Core Project Team. • The Steering Committee will meet at a minimum monthly, and more frequently at the request of the Project Manager or the Steering Committee • The Steering Committee will determine the need and timing of any necessary internal or external authorizations (for example, from the ET, the BC Hydro Board of Directors, or the BC Utilities Commission). The Project Manager will coordinate the delivery of any information required by the Steering Committee to fulfill this responsibility. The Project Team will proceed on the assumption that any necessary approvals / authorizations are in place unless otherwise advised by the Steering Committee

Project Body	Governance / Decision Making Role
Project Management Team	• Receives the mandate from the Project Sponsors and Steering Committee to deliver the project per the items defined in this charter • Is empowered to develop and execute the required project management plans. Detailed Project Management Plans are available for review by the Steering Committee upon request. • Provides work assignments to the Core Project Team, and monitors the progress of these assignments • Provides periodic updates to the Steering Committee
Core Project Team	• Is empowered to make design decisions necessary to develop and implement the most appropriate solution per the objectives, scope, and guidelines defined in this charter. "Key" design decisions will be reported to the Steering Committee for review. Design decisions involving organizational changes will be submitted to the Steering Committee for approval • Wherever possible, the Core Project Team members will be assigned full-time to the project. Where members are not full time, this will be managed as a project risk
Subject Matter Experts	• The Subject Matter Experts (SME's) provide input and take part in design discussions and decisions, but do not have a specific role to play in the governance of the project
Business Advisory Team	• The Business Advisory Team represents the end users of the solution and are used to help assess the impact the solution will have on the business • The Business Advisory team does not have any decision making authority on the project • Feedback on the design and the solution will be gathered from the Business Advisory Team through workshops facilitated by the Core Project Team. The output from these workshops will be reviewed with the Steering Committee. Items where the feedback from the Business Advisory Team is in conflict with the design decisions made by the Core Project Team will be submitted to the Steering Committee for decision

6.1. Team Organization and Responsibilities

The roles and responsibilities for the Project are summarized in the following table:

Project Body	Roles	Responsibilities
Sponsorship and Steering Committee	**Project Sponsors**	• Appoints the Steering Committee • Obtains / ensures ongoing organizational commitment, including Business Groups, Subsidiaries, the Executive Team and the Board of Directors • Ensures strategic alignment, establishes the priority for this Project relative to other strategic priorities and ensures appropriate resource deployment. • Provides Steering Committee with timely access to the Executive Team, as necessary, to obtain consents or resolve issues. • Receives regular updates, as appropriate, from the Project Sponsor • Supports change management and communications. • Is a visible and vocal advocate for the project and

Project Body	Roles	Responsibilities
		implementation
Sponsorship and Steering Committee	**Project Initiator**	• Chairs Steering Committee meetings • Provides periodic updates to the Project Sponsors • Assume operational authority over and responsibility for the project • Ensure the commitment of project participants from the business unit • Set overall project direction • Guide and oversee the project • Approve project scope and objectives • Monitor overall project progress through regular status meetings • Review and decide upon Change Requests that materially affect the project budget and schedule • Ensure the removal of organizational barriers • Resolve issues that require senior management involvement • Attend and participate in project status meetings, as required
	Steering Committee Members	• Responsible for overall governance of the Project. Steering Committee members will provide advice to the project on behalf of their Business Group but, at all times, will guide the Project on a basis that will provide the best outcome for BC Hydro as a whole. • Provides input into, and approves, the Project Charter • Appoints the Project Manager, and ensure appropriate project controls are in place. The Project Manager will report to the Steering Committee • Appoints the Quality Assurance Lead and ensures appropriate quality assurance plans and mechanisms are in place • Appoints the Business Lead. The Business Lead will provide input to the Project Manager, and report to the Steering Committee • Has sufficient understanding of the Project plan to ensure the overall Project Charter objectives and principles will be satisfied • Attends all Steering Committee meetings and receive and approve regular reports regarding project progress, completion of key project milestones, schedule, budget, and risks • Ensures appropriately qualified BC Hydro business and IT personnel are available to the Project, when required • Reviews and, if appropriate, approves requested scope changes • Reviews and approves project costs, and ensure business case and adequate corporate funding is in place • Approves significant changes to project budget and timeline • For greater clarity in regards to the use of SAP specifically, the Steering Committee will accept The Core Project Team's decisions regarding SAP configuration and associated business process

Project Body	Roles	Responsibilities
		implications, providing these are consistent with the objectives and principles in this Charter such as using and configuring SAP in a standard manner. In cases where customizations or non standard processes are recommended or necessary, then these items will be escalated to the Steering Committee for consideration • Will review all key decisions made by the Core Project Team • Will review and approve all design decisions involving changes to the current organization structure • Will provide decisions where the feedback from the Business Advisory Team is in conflict with the design decisions made by the Core Project Team • Supports change management and communications. • Are visible and vocal advocates for the project and its implementation
Project Management Team	**Project Manager**	• Accountable for acceptable completion of the Project plan tasks on time, in scope and on budget • Responsible for ensuring coordination and integration of project deliverables and timelines with related initiatives identified in the Project Charter or, otherwise, as identified by the Steering Committee • Responsible for developing all project plans and managing the overall Project delivery, and achievement of targeted Project performance metrics • Responsible for escalation and coordination of issues to ensure timely resolution • Maintains issues log, reports on project risks, and ensures mitigation plans are developed and implemented on a timely basis • Works closely with the SAP Enterprise Lead to ensure the Project approach and methodology aligns with BC Hydro standards and is reusable on other later SAP implementation projects • Works closely with the Quality Assurance Lead to ensure the Project Quality Management Plan aligns with BC Hydro standards and is integrated with the overall project delivery • Supports change management and communications • Will be accessible to the Project Team during all business hours, and otherwise within 24 hours, with reasonable allowance to be made for pre-scheduled time off
	Project Management Support	• Reports to the Project Manager • Supports Project Manager as required in performance of his role, including drafting of status reports, updates to logs and schedules
Project Management Team	**SAP Enterprise Lead**	• Owns BC Hydro accountability for acceptable completion of the Project plan tasks on time, in scope and on budget • Supports and enables the Project Manager in delivery of the PM responsibilities as defined above • Works with the Project Manager to ensure project management plans align with BC Hydro standards, and that methodology components are reusable on future SAP projects

Project Body	Roles	Responsibilities
		• Approves and ensures delivery of target SAP implementation architecture and alignment with BC Hydro IT&T Strategy. i.e. accountable for overall evolution of SAP landscape at BC Hydro including changes introduced by PPM Project • Responsible for delivery of SAP sustainment strategy to enable successful production turnover and ongoing support for the PPM processes • Ensure alignment of the PPM Project with other Enterprise SAP program initiatives • Resolve and/or mitigate issues which may potentially arise from scoping, timing, resourcing conflicts related to other SAP initiatives • Responsible for overall procurement and management of SAP project resources and associated financial commitments. Supports change management and communications
	Business Lead	• Provides oversight to ensure that business process and system design meets operational requirements, and consistent with Project objectives and principles • Receives and provides input to related projects to ensure consistency / alignment of process designs • Approves process designs • Provides or identifies subject matter expertise as required • Supports change management and communications • Determines which design decisions are to be categorized and managed as “key” design decisions • Attend project status meetings
	Technical Lead	• Provides oversight to ensure that system design is consistent with BCH technical standards and policies and is consistent with Project objectives and principles • Engages required technical team members and other BCH and external expertise as required to develop and confirm interface and data conversion specifications • Manages systems analysts for legacy systems analysis • Receives and provides input to related projects to ensure consistency / alignment of technical designs • Approves technical designs • Provides or identifies subject matter expertise as required • Be an active member of PPM project team • Attend project status meetings • Supports change management and communications • Determines which technical design decisions are to be categorized and managed as “key” design decisions
	Change Management Lead	• ‘Champion’ the project • Use BCH best practice tools and processes for collection, analysis and documentation of organization change management activities, including communications and training • Be an active member of PPM project team • Identify and manage additional change management,

Project Body	Roles	Responsibilities
		communications and training resources as required • Attend project status meetings
Core Project Team	**Core Project Team**	• The Project Core Team is the primary working group and is comprised of individuals assigned either full time or near full time to the project • The team is empowered to develop and implement the best solution design based upon the scope, objectives and guidelines in this charter, and taking into account the input from the business and the capabilities of SAP • The team has responsibility for day to day delivery and outcomes of the project • Attend project status meetings
Subject Matter Experts	**Subject Matter Experts**	• Provide information and requirements on behalf of the business, and work with the core design teams to assess solution alternatives and develop future state designs. During the Blueprint Phase of the project, SME's are expected to provide details and to help clarify the current business processes, including: applicable business rules, current applications, and governing policies and standards. It is also expected that SME's will likely have to consult with others in their business areas in collecting details and clarifying requirements. The SMEs' primary interaction with the core project team will be through design workshops which will be organized and facilitated by the core team members. • In the Realization Phase of the project, as the "to be" designs are completed, the SME's will be involved in assessing how the new processes will impact the business and will assist in developing change management strategies for successfully implementing the solution. SME's may also be used in the delivery of some project communications • Later in the Realization Phase, the SME's will also become involved with testing the solution and may be involved in reviewing training material and end user documentation for completeness and accuracy
Subject Matter Experts	**Other External Advisors**	• BC Hydro may retain additional external advisors and subject matter experts to ensure the project has the comprehensive expertise needed to deliver high quality and authoritative project outcomes • These external advisors will be managed by and report to BC Hydro via the Project Manager • It is the intent of BC Hydro to include such advisors within the overall project team to foster open and informed discussions amongst team members, with a view to optimizing the target system design consistent with the objectives and principles established in this Charter • These advisors may attend workshops, produce deliverables, participate in team meetings, etc as directed by the project manager

6.2. Team Structure

The PPM Project Organization is described in Figure 4 below. Additional project resources are required for Phase 3 (Realization forward) will be added to future iterations of the Project Charter.

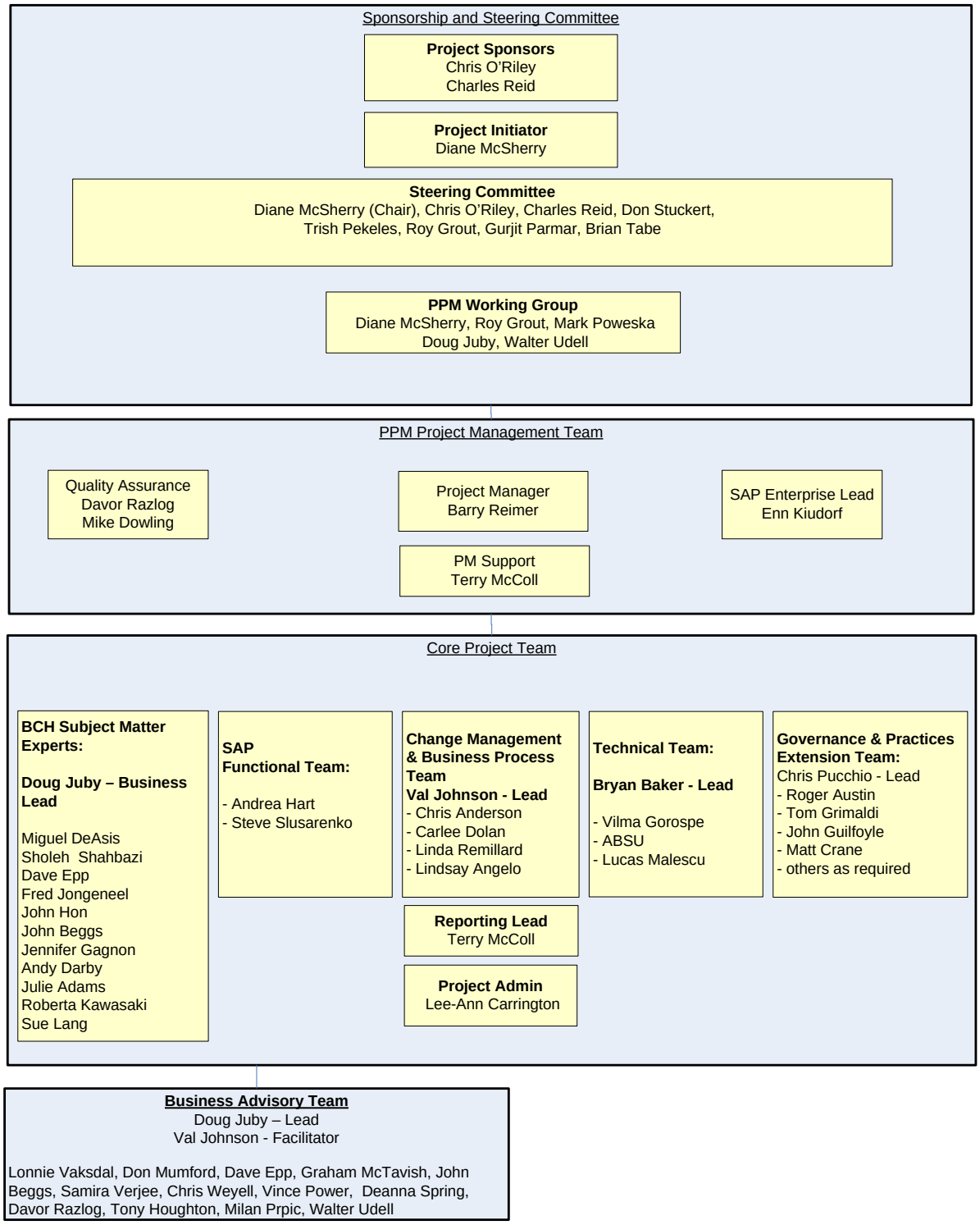


Figure 4 – PPM Phase 2 Organization Chart

7. PROJECT MANAGEMENT

The Project Manager is accountable for the development, execution, and monitoring of the project management plans in keeping with the governance structure outlined in this charter. The following required elements will be included within the appropriate management plan.

7.1. Progress Reporting

- The project will report progress via periodic status reports, which will be prepared to coincide with the Steering Committee meeting schedule.

7.2. Scope Control

- Project scope will be controlled via the Project Manager through an escalation process to the Steering Committee.
- Proposals to amend the project scope will be documented by the project manager and tabled for review and approval by the Steering Committee.

7.3. Issue Management

- The project manager will arrange for a formal issue log of project issues to be maintained.
- High priority open issues will also be reflected on current status reports to ensure visibility to the Steering Committee.

7.4. Risk Management

- The project manager will arrange for a formal project risk register to be developed and maintained.
- This will be done in coordination with BC Hydro's risk management group to ensure a consistent and rigorous approach to risk
- Key risks (high impact and/or high probability) will also be reflected on current status reports to ensure visibility to the Steering Committee and Project Coordination Committee.

7.5. Quality Assurance

- The Quality Assurance Lead is responsible for the development, execution, and monitoring of the Quality Assurance Plan.
- The Quality Assurance Lead will provide periodic updates to the Steering Committee, as outlined in the QA Plan.
- The OCIO IT QA role will interface to the project through this role and will have the ability to escalate issues independently to the steering committee, if needed.

7.6. Project Management Information System (PMIS)

- The project will use a combination of tools for the PMIS, including:
  - MS Excel for cost and resource planning and tracking (costs will be captured in PeopleSoft financials project costing module)
  - MS Project for schedule management
  - MS Word documents for status reporting
  - SharePoint (when available) for the Project Register and for issue management

8. BUDGET

A budget of $3.98 million ($1.52 M OMA, and $2.46 M Capital) has been approved via the current business case for the completion of the Business Blueprint Phase of the project. A refined and final business case will be submitted for approval at that time.

The Project Budget will be managed via the Project Cost Plan and reported to the Steering Committee via the regular status reporting procedure.

APPENDIX A – GLOSSARY OF TERMS AND REFERENCES

Acronym / Term	*Definition*
ACFO	Acting Chief Financial Officer
AV / VO	Annual Vacation / Vacation Overtime
BAT	Business Advisory Team is made up of business group representatives from across the organization.
BCH	British Columbia Hydro
BCTC	British Columbia Transmission Corporation
BI	Business Intelligence
Brio	A reporting software application. InfoPM currently uses Brio for reporting extractions.
Capital Plan	The list of approved proposals
CART	Capital and Risk Team
CCAR	Contract and Commitment Authorization Request (for contracts over $5M require CCAR)
CFO	Chief Financial Officer
CIO	Chief Information Officer
CPS	Corporate Policy Statement
CPO	Chief Procurement Officer
CR	Change request
CRO	Commercial Resource Optimization
CROW	Control Room Operating Window (used by BCTC to coordinate outages)
CSO	Chief Strategy Officer
Data Warehouse	A repository of data used storage and reporting.
EAR	Expenditure Authorization Request
EARG	New name of the three business groups that were combined to form one business group.
EBR (EDW)	Enterprise Business Reporting/Enterprise Data Warehouse
ECART	Executive Capital and Risk Team
ERP	Enterprise Resource Planning, a system that integrates data and processes of an organization into a unified system. ERP Systems typically attempt to cover all basic functions of an organization, regardless of the organization's business or charter.
ESP	Software used by EARG for Asset management.
FileNet	Documentation repository
InfoPM	Project cost management system software for planning, tracking, controlling and reporting project work used in EARG for Engineering and Project Delivery.
InfoTrac	Application in use in EARG, Engineering and Project Delivery for contracts and commitments management.
IT	Information Technology

Acronym / Term	*Definition*
IT&T	Information Technology & Telecommunications
MWH	Vendor retained by EARG to provide project management services for 3 large capital projects. MWH is a global provider of consulting, engineering, construction and management services in water, natural resources, and infrastructure sectors.
OCFO	Office of the Chief Financial Officer
OCIO	Office of the Chief Information Officer
P2P	The supply chain activities that an organization performs to support the ordering, receipt and payment of goods and services. Procure to Pay Project will identify and implement improvements in the process to purchase goods and services.
PassPort	Software application used for work management and inventory management
PD	Project Director
PM	Project Manager
PMBOK	Project Management Body of Knowledge
PMI	Project Management Institute
PMSP	Project Management Services Partnership project in conjunction with EARG and the vendor, MWH
Portfolio	A portfolio is a collection of projects or programs and other work that are grouped together to facilitate effective management of that work to meet strategic business objectives.
PPM	Project Portfolio Management
Primavera	Project scheduling software tool
Program	A program is a group of related projects managed in a coordinated way to obtain benefits and control not available from managing them individually.
Project	A Project is defined as a finite endeavor undertaken to create a unique product, service, or result having a specific start and completion dates which brings about beneficial change or added value. A Project has an assigned Project Manager and will follow some form of methodical project management approach to managing scope, schedule and cost.
Project Charter	Statement of the scope, objectives and participants in a project. It provides a preliminary delineation of roles and responsibilities, outlines the project objectives, identifies the main stakeholders, and defines the authority of the project manager.
Project Portfolio Management	Project Portfolio Management (PPM) is an integrated system for managing a project-based business and fundamentally changes the organization's understanding of managing projects. PPM is the practice of managing projects as investments and provides the management of project management

Acronym / Term	*Definition*
	processes and alignment with business goals.
Project Scope	Defines the project work breakdown structure and totality of work needed to complete the project. The project scope is the boundary that tells where the project begins and ends.
Proposal	An idea – usually recorded on the project fact sheet. Refers to ideas that are not yet part of the official Capital Plan.
ProSight	Portfolio management software
PSDP	Project and Service Delivery Practices in use in EARG
RIM	Records and Information Management Project
RFP	Request for Proposal - The method of soliciting competitive, solution-based responses from the vendor community for the purchase of goods or services, where the evaluation criteria include elements of subjectivity (e.g. Scoring/judging, weighting)
RFS	Request for Service
SAP	An Enterprise Resource Planning software package including modules for financial accounting, project costing, materials management, project portfolio management XPRM, Enterprise Portal, cProject Suite Collaboration Projects, Workflow, etc.
SC	Steering Committee
SharePoint	Team collaboration tool
SOO	Statement of Objectives(contract between Project Sponsor and Project Manager)
TBD	To be determined
TCM	FileNet component for managing documents with teaming focus
TRMS	Time Reporting Management System. Time tracking for project resources that use InfoPM to provide detailed time reporting.
UMS	Capital Project Prioritization software
WBS	Work Breakdown Structure
Work Management	Work Management generally refers to operate and maintain activities as well as smaller customer driven jobs that are generally currently managed within the PassPort Work Management System. A “job” in the context of Work Management is generally managed by a Field Foreman or Field Supervisor rather than by a Project Manager.
WMP	Work Management Project, refers to as ‘EARG’ Work Management Project as there is a project in Field Operations also called ‘Work Management Project’

BC hydro

Project & Portfolio Management Wave 2 (PPM)

Project Document Management & Collaboration System (PDMCS)

PROJECT CHARTER

July 10, 2011

TABLE OF CONTENTS

DOCUMENT INFORMATION AND REVISION HISTORY 4

APPROVALS 5

1. EXECUTIVE SUMMARY 6

2. PROJECT OVERVIEW 7

2.1. PROJECT DESCRIPTION 7
2.2. PROJECT KEY OBJECTIVES 8
2.3. PROJECT BENEFITS 8
2.4. PROJECT GUIDING PRINCIPLES 9
2.5. ASSUMPTIONS 9
2.6. MEASURES OF SUCCESS 9
2.7. KEY RISKS 11

3. PROJECT SCOPE 11

3.1. ORGANIZATIONAL SCOPE 11
3.2. BUSINESS PROCESS SCOPE 11
3.3. TECHNICAL SCOPE 12
3.4. REPORTING SCOPE 13
3.5. OUT OF SCOPE 13

4. CONSTRAINTS AND DEPENDENCIES 14

4.1. CONSTRAINTS 14
4.2. DEPENDENCIES 15

5. PROJECT APPROACH 16

5.1. OVERALL APPROACH 16
5.2. HIGH LEVEL SCHEDULE 16

6. COMMUNICATION 17

7. PROJECT GOVERNANCE AND ORGANIZATION 18

7.1. TEAM ORGANIZATION AND RESPONSIBILITIES 21
7.2. TEAM STRUCTURE 24

8. PROJECT MANAGEMENT 25

8.1. PROGRESS REPORTING 26
8.2. SCOPE CONTROL 26

8.3. ISSUE MANAGEMENT 26
8.4. RISK MANAGEMENT 26
8.5. QUALITY ASSURANCE 26
8.6. PROJECT MANAGEMENT INFORMATION SYSTEM (PMIS) 27

9. BUDGET 27

APPENDIX A – REFERENCE DOCUMENTS 28

DOCUMENT INFORMATION AND REVISION HISTORY

Document Owner	Davor Razlog
File Name(s)	PPM Project Charter
Stored at	SharePoint
Original Author(s)	Darlene Henry, PPM Project Delivery Lead

Revisions:

Version	Date	Comments
DRAFT	2010, September 12	Initial draft based on Project Charter from Phase 2 and the Business Case for Wave 2
DRAFT	2010, November 2	Update 2.6, 2.7, 2.8 (criteria, assumptions, success) as per Doug J.
DRAFT	2010, November 17	Combine 2 constraint sections
DRAFT	2011 May 6	Revised for updated PPM Phase 3 Business Case
DRAFT	2011 July 10	Revised to include PDMCS (Project Document Management and Collaboration System

APPROVALS

Previous approvals:

1. Phase 1 started in July 2008, and was approved by the Steering Committee in September 2008.
2. Phase 2 Project Charter was approved May 25, 2009.
3. Business Case for Phase 3 was approved December 2009.
4. Revised Business Case for Phase 3 was approved April 13, 2011
5. PDMCS Business Case was approved March 29, 2011.

This Project Charter defines Wave 2 and PDMCS which are part of Phase 3 and will be approved by the following:

Subsequent changes to this Charter will be made via Project Change Requests.

Role	*Name*	*Title*	*Signature*	*Date*
Project Sponsor	Chris O'Riley	Senior Vice President, Generation		
Project Initiator	Roy Grout	Vice President Engineering, & Chief Engineer		
Project Manager	Davor Razlog	PPM Project Manager		

1. EXECUTIVE SUMMARY

The BC Hydro Project & Portfolio Management project (PPM) is an enterprise wide sustaining capital initiative that will provide a flexible, scalable solution to enable improvements in project, program and portfolio execution across BC Hydro.

The project is in response to BC Hydro management recognition that improvements to current processes and tools are required to efficiently manage BC Hydro's significantly increasing capital plan over the coming years.

The PPM project was designed to be executed in three phases:

Phase 1 – Project Initiation (complete).

Phase 2 – Solution Verification (Blueprint)

Phase 3 – Solution Implementation for EARG (Realization, Final Preparation and Go- Live)

Subsequent planning and the requirement to meet the deliverable date of April 2010 with the FSR Project split Phase 2 and Phase 3 into multiple waves:

1. Wave 1 go live in April 2010 – to replace Info PM and coincide with replacement of financial system.
2. Wave 2a go live in April 2011 – Practices Reference Tool, continuation of wave 1
3. Wave 2b go live in June 2011 – Primavera P6, Revised and new Practices
4. Wave 2c go live in August 2011 - BW Reporting
5. PDMCS go live in December 2011 – Document Management (separate business case)
6. Stabilization period to end both projects by Feb 29, 2012.

Wave 2 of the PPM Project focuses on the enhancement of fourteen existing PPM practices and development of three new practices in the areas of Portfolio Management, Resource Management and Schedule Management. These practices and processes will support better outcomes for individual projects as well as the project portfolio as a whole. These enhancements will be supported by a new IT environment based upon an integrated SAP/Primavera P6 platform.

The purpose of the PDMCS project is to provide BC Hydro's engineering construction project teams with a structured workspace for collaboration and for sharing project documents. The project will require the development of processes for the management of project documentation and the implementation of software tools to support these processes. The PDMCS implementation will leverage BC Hydro's existing investment in SharePoint and FileNet P8.The Project Organization has five overall bodies: Sponsorship and Steering Committee, Project Management Team, Core Project Team, Subject Matter Experts, and Business Advisory Team. The Project Manager will be responsible for ensuring that work is aligned with the objectives and principles

established under this document. Any updates to the Project Charter must be reviewed and approved by the Project Steering Committee. The project will generally follow IT DSP methodology supplemented with specific best practices based on the external consultants experience and adjusted where necessary to fit within the existing OCIO and corporate Change Management standards.

A budget of $ $18,816k ($3,598k OMA, and $15,218k Capital) has been approved via the current business case for the entire Project & Portfolio Management Project.

A budget of $2,795.8k ($413.6k OMA, and $2,382.2k Capital) has been approved via the current business case for the Project Document Management & Collaboration System Project.

The Project Budget will be managed via the Project Cost Plan and reported to the Steering Committee via the regular status reporting procedure.

Taken together, the Business Case (PPM and PDMCS), Project Charter and Change Requests will define the overall requirements, life, and measures of success for the projects.

2. PROJECT OVERVIEW

The respective Business Cases for the PPM and PDMCS Projects provide the majority of the information for both of these projects. This Project Charter serves to complete those areas that are not detailed in the business case. These projects are closely aligned with shared resources, hence one Project Charter is sufficient to cover both projects .

The Project Manager will be responsible for ensuring that work is aligned with the objectives and principles established under the Business Case and Project Charter Any updates or modifications must be reviewed and approved by the Project Steering Committee.

2.1. Project Description

Project & Portfolio Management (PPM) is an industry-wide term used by organizations to describe methods for analyzing and collectively managing a group of current or proposed projects as well as best achieving the organization's business or technical strategic goals. Key definitions on the general Project Management terms were defined in the Phase 2 Project Charter.

Wave 2 of the PPM Project focuses on the implementation of enhanced PPM practices and processes. This will include the enhancement of fourteen existing PPM practices and development of three new practices in the areas of Portfolio Management, Resource Management and Schedule Management. These practices and processes will support better outcomes for individual projects as well as the project portfolio as a whole. These

enhancements will be supported by a new IT environment based upon an integrated SAP/Primavera P6 platform.

The vision of the PDMCS Project is to enable the management of construction engineering project documents at BC Hydro by supporting the delivery of unstructured project documentation (MS Word documents, spreadsheets, email, etc.)in a timely and cost effective manner. The project will require the development of processes for the management of project documentation and the implementation of software tools to support these processes. The PDMCS implementation will leverage BC Hydro's existing investment in SharePoint and FileNet P8.

2.2. Project Key Objectives

The key objectives of the PPM & PDMCS projects are to:

- Identify and refine foundational business processes so that standard and efficient PPM practices are enabled across the BC Hydro organization that will allow the effective delivery of the BC Hydro capital program at both a project and a program level.
- Align business process improvements to a business operating model that requires clear accountabilities and responsibilities.
- Improve PPM planning, scheduling, reporting and portfolio management practices, processes and tools so that resources are managed more efficiently and projects and portfolios are advanced in a predictable, timely and cost efficient manner.
- Identify and implement new technologies consistent with the BC Hydro IT&T Strategy to enable the organization-wide project portfolio management processes
- Retire legacy applications where functionality has been replaced by new technology
- To provide BC Hydro's engineering construction project teams with a structured workspace for collaboration and for sharing project documents.

2.3. Project Benefits

The benefits of the PPM project will be realized through better outcomes in terms of management of scope, schedule, cost and quality of Engineering Construction Projects. These benefits will be realized over many years and in some cases over decades, through reduced project costs and increased project quality that will result in reduced project depreciation, amortization and maintenance costs.

Addtiional benefits will be realized in the PDMCS Project:

- Opportunity to reduce risks
- Opportunity for better project outcomes
- Opportunity for increase project delivery efficiency
- Opportunity to leverage knowledge assets in other document repositories

2.4. Project Guiding Principles

The following are the project principles that will guide the project team through each phase of the project.

- Design solution for most common engineering construction project types with scalability for all size and type of engineering construction projects.
- Design base solution to support future program and portfolio management
- SAP cost management being fully operational and accepted by the business is a required foundation for implementing wave 2 functionality (includes P6 integration for three large generation projects)
- Solution must be tested for Generation and Transmission & Distribution to ensure that it is robust prior to roll out
- Roll out wave 2 functionality first to those areas where we have the skills available
- Business group is accountable for implementation with appropriate support from project teams.
- Project management processes must be fully operational and accepted by the business prior to implementing IT tool functionality that supports program and portfolio management
- IT tools will not be customized to replicate the source of truth in the system of record
- 80 / 20 design guideline for IT tools / processes in scope
  - Out of the box configuration implemented with high quality
  - Customizations to SAP and Primavera P6 require steering committee approval

2.5. Assumptions

- Assumptions are detailed in the PPM and PDMCS Business Cases.

2.6. Measures of Success

Business Success

The PPM and PDMCS projects will have a staged implementation where functionality will be rolled out to Transmission Engineering and three large Generation projects first followed by (balance of Generation Projects / Transmission Major Projects / Distribution Major Projects). As

a result, the business success will not be realized until several months after the project go live as projects slowly migrate to the new processes and tools.

Success will be measured by

1. The implementation of Requirements as documented in the Requirements Traceability Matrices and delivered as per the Project Schedules.
2. SAP Cost Management enhancements from wave 1 being fully operational, accepted by the business (T/D/G), and staff fully trained on:
    - KDD 165 / 167 ETC Distribution Calculator
    - KDD 169 Forecasting Costs in PassPort Work Orders
    - KDD 168 Commitment Definition and Handling
    - KDD 174 Management of Direct and Indirect Costs
    - KDD 163 Inflation solution
3. Project management processes defined and accepted by the business and staff fully trained on:
    - Scheduling management processes
    - Resource assignment to project activities with visibility of capacity and demand (capacity planning processes are manual for wave 2 deployment)
    - Scope and change management processes
    - Performance reporting
4. Practices Reference Tool fully operational and accepted by the business (T/D/G)
5. Migration of selected engineering construction projects to wave 2 processes
6. PPM process management sustainment model operational, staffed and supported by the business (T/D/G)
    - PPM roadmap submitted prior to project completion
7. A user group of BC Hydro employees who are engaged in engineering construction projects that are trained in project management and collaboration practices as well as in the use of the PDMCS tool.
8. The number of projects managing project documentation using the PDMCS solution
9. The number of documents in the repository.

Project Success

The PPM Project will be considered successful when:

- We achieve an appropriate balance between project risk, business risk and business value for the PPM project.
- The solution design, project plan and team structure enables the project to deliver the highest magnitude of benefit with a targeted timing to benefit that aligns to the go-live dates.
- The project is completed within the revised budget and any subsequent approved change requests.
- 12 months after go live there are visible improvements in productivity.

Technical Success

The projects will be considered technically successful when:

- Primavera P6 is approved by OCIO as an enterprise solution
- An integrated web based portal is the 1st place that key project resources go to each day to do their work
- Primavera P6 or SAP/PS is used for all project scheduling. Microsoft Project, Excel or other tools are not used because the PPM solution is preferred by the business.
- The PPM Reporting solution satisfies 90% of reporting requirements without any need to download/extract data into some other reporting tool such as Excel
- All project documents are managed in SharePoint, most significant projects have their own SharePoint site linking to the new PRT derived PSDP practices.
- The business no longer yearns to return to the "good 'ol days" of InfoPM
- PPM Program/Portfolio/Resource management, Quality Management, Scope management solutions in production
- Enterprise Projects using the PPM solution end-to-end, in particular SMI, Spillway Gates, Site C, John Hart, Ruskin, Mica 5&6

2.7. Key Risks

Key risks are defined in the respective business cases and will be moved to the Risk Register to be monitored and mitigated through the projects as required.

3. PROJECT SCOPE

3.1. Organizational Scope

As outlined in the business cases, the primary focus of these projects are Transmission & Distribution (T&D) and Generation. Other business groups will be invited to participate in the design reviews through participation on the Business Advisory Team, as it is anticipated that the solution will eventually become an enterprise-wide solution.

3.2. Business Process Scope

The business process scope will include the corporate view of project, program and portfolio management with inputs from current business unit standards including the Project and Service Delivery Processes (PSDP) and the Project Management Services Partnership (PMSP).

Three new practices (Resource Management, Schedule Management, and Portfolio Management) will be developed and rolled out, leveraging the new tools to be implemented. All existing practices will be aligned to the standardized project lifecycle runways and rolled out to the target groups.

Critical functions within scope include:

1. Resource Management (new)
2. Schedule Management (new
3. Scope Management

4. Cost Management
5. Project Risk and Issue Management
6. Reporting & Performance Management
7. Portfolio Management (limited)
8. Program Management (limited)
9. Practices Usability, Variants and Tailoring
10. Project Document Management & Collaboration
11. Project Quality Management

Projects in process and new projects will be converted to the new business processes and enabling technology. It is anticipated that process training could be initiated in advance of the technology training.

3.3. Technical Scope

The focus of the PPM Wave 2 solution is based on Primavera P6 integrated with SAP/Project Systems. P6 will be the primary solution for Schedule Management and SAP/PS will be the primary solution for Cost Management, with Resource Management and other critical functions being served by integrating the complementary capabilities of SAP and P6. Integration between SAP and P6 will be provided by the SAP Enterprise Project Connector (the successor to Confero). The BC HydroTibco ESB will continue to provide integration capabilities with PassPort, PeopleSoft. The future related solutions to be implemented by EMPower and PSW will be considered in the PPM solution design.

SAP Business Objects reporting tools including BEx and Crystal Reports, and the native reporting capabilities of SAP and P6 Web will provide reporting, analysis and dashboards for KPIs, Quality metrics, risks and other data for Projects, Programs and Portfolios.

SharePoint will provide access to Project Documents and host a “PPM Portal” providing projects with an integrated access mechanism allowing somewhat seamless navigation between the different parts of the overall solution. (This is a separate Document Management & Collaboration Project)

Improved PDSP practices will be managed in the Rational Methods Composer.

3.3.1. Interface Scope

The only known interface for wave 2 is the commitment interface for Purchase Orders/Contracts/Materials between Passport and SAP. Significant work is required to implement the new EPC version for the Confero/EPC for SAP/P6 interface.

Additional interfaces will be included as necessary.

3.3.2. Data Conversion Scope

There is no significant data conversion within scope.

3.4. Reporting Scope

The reporting scope of the project includes standard project management reporting and configurable dashboards from SAP PS, RPM and Business Intelligence (BI) based on the key business functions within scope.

3.5. Out of Scope

Primary functional activities deemed out of scope for the PPM project are:

- Capital Planning processes for all business units.
- Post Implementation operate processes related to Asset Management (Sustainment, Support, Warranty), and Asset Accounting.
- Field Operations and Generation Work Management as currently done in PassPort. Work Management generally refers to operate and maintain activities as well as smaller customer driven jobs that are generally managed within the PassPort Work Management System. A "job" in the context of Work Management is generally managed by a Field Foreman or Field Supervisor rather than by a Project Manager in Distribution Engineering.
- Replacement of the Work Management System (PassPort, DAD, etc).
- Organizational structure redesign.
- A complete redesign of Project and Service Delivery Practices (PSDP) is out of scope, however the development of project lifecycle runways for projects of varying complexity (e.g. small/medium/large or low/medium/high) is in scope.
- The SAP RPM, which supports Portfolio and Program Management will not be deployed, hence these practices and tools will be limited in their deployment.

The following tools currently in use at BCH are to be out of scope for the PPM project and will be not reviewed for replacement or integration:

MS Word (other than use as a PPM tool)	PassPort – will not be replaced, but additional integration may be required.
PeopleSoft Financials and project costing and integration to SAP (replaced by SAP and FSR project)	Heavy Bid (EARG estimating)
CRO, DAD	FileNet integration to SAP (FSR) and SharePoint (part of another OCIO initiative)
Integration to BCTC Oracle (part of FSR scope)	Drawing Management

Anything else not specifically identified as being in scope is considered to be out of scope.

4. CONSTRAINTS AND DEPENDENCIES

This section outlines the key external constraints and dependencies that may impact this project and its ability to be completed successfully. Each item represents a risk to the project and will be tracked and managed through the project Risk Management Plan.

4.1. Constraints

1. Because the scope of the project does not include making changes to the existing legacy systems that will interface to SAP (most notably PassPort), it is quite likely the solution design will be constrained by the current legacy system designs. As specific items are identified where this is the case, they will be managed as issues and escalated to the Steering Committee.
2. The Project Management practices for the project will need to align with the IT Development Standard Process (IT DSP).
3. The Change Management practices for the project will need to align with the standard Enterprise-wide Change Management Network practices.
4. The existing Project and Service Delivery Practices (PSDP) and related documented processes will be taken as a starting point for this project with the objective of implementing a “One Hydro” view of Project Portfolio Management that will support the needs of individual business groups.
5. Development is to align with the Enterprise Service Bus (ESB) Program whose mandate is to select, deploy, and operate a standard set of system integration tools. Interfaces developed for this project will utilize this new technology and will be developed through the Infrastructure Applications group.
6. PPM approved revised EAR budget not to be exceeded
7. SharePoint business case funding is a prerequisite to implementing SharePoint based improvements in project collaboration; document management, and risk and issue management functions. This EAR was approved mid-March 2011.
8. Additional labour resources will be sourced within existing business unit head count levels. Additional contract labour resources can be assigned to projects with consideration to collective agreements
9. Outside operations (plant and field work) work management and maintenance processes are out of scope
10. IT tools in scope: SAP PS; Primavera P6; Confero/EPC; Business Warehouse, and; Practices Reference Tool. (additional IT tools are out of scope)

4.2. Dependencies

The PPM Project has dependencies on the following project initiatives:

Project Management Services Partnership (PMSP)	Tools and processes from PMSP to be used as input to PPM are still not in complete production and as a result there are still risks that processes and tools will not perform as expected and will impact PPM.
Records and Information Management Project (RIM)	A corporate project sponsored by Ray Aldeguer to improve access and maintenance of critical documents across BC Hydro.
EmPower	The EMPower Project is a significant part of the overall Human Resources Business Strategy and addresses all HR Business Processes; redesigning the end to end processes and providing a technology solution to ensure these processes are automated and efficient.
PSW (Plan and Schedule Work)	To reengineer all business processes for simple high volume work (not including projects). The scope includes all types of work done in Field Operations and all process steps; initiate, plan, schedule, dispatch, execute, close and analyze. The scope includes the process redesign, and all related technology implementations including planning tool, scheduling tool, preventative maintenance tool, unplanned maintenance tool, resource management (people, equipment and materials) tool, and a mobility/RFID tools. While being developed under Field Operations, the designs/processes will be rolled out to Generation maintenance and, if appropriate other areas (e.g. Properties).
Integrated Portal	To establish an integrated and unified approach to digital (web and mobile) interactions that provides engaging experiences to employees, customers and stakeholders. This three-year foundational program (five year NPV) directly supports business objectives. It anchors on a role-based approach, supports many existing transformational projects (including SMI, PSW, DMS, FSR, HR Empower, PPM, CRM/CC&C, Kairos) and shares common objectives with RIM, EPIC, Collaboration, and Desktop/eMail.
Procurement Document Management Improvement	Improvement to current procurement processes.

5. PROJECT APPROACH

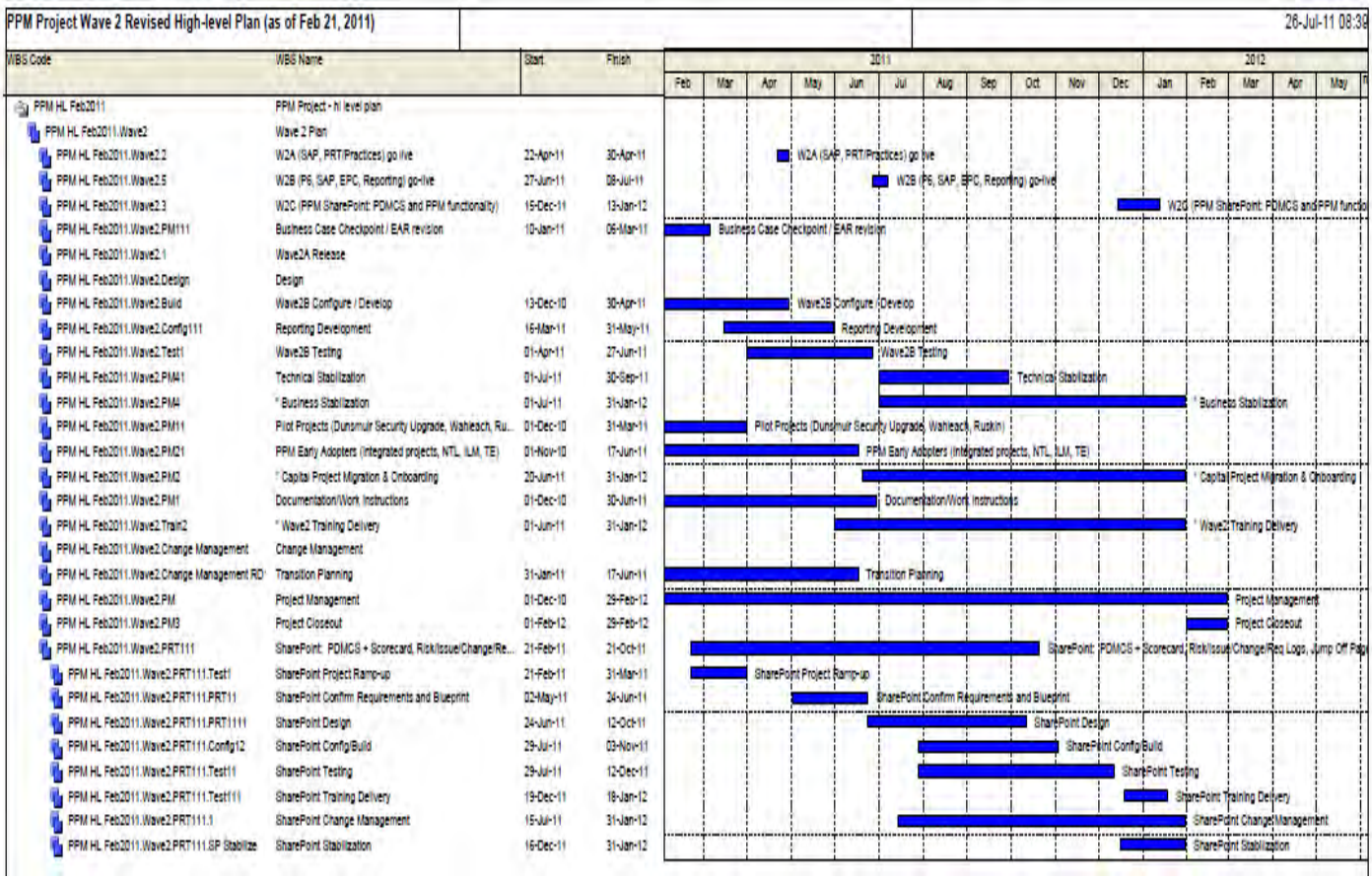
5.1. Overall Approach

The project will generally follow IT DSP methodology supplemented with specific best practices based on the external consultants experience and adjusted where necessary to fit within the existing OCIO and corporate Change Management standards.

5.2. High Level Schedule

The targeted project milestones are as follows. The Current plan is detailed through Blueprint. At the end of Blueprint a full detailed plan will be developed

This revised plan dated July 26, 2011 incorporates the results of the Blueprint , the revised PPM Business Case and the PDMCS Business Case.



6. COMMUNICATION

The following meetings are planned to be conducted within the PPM Project.

Meeting name	*Purpose*	*Frequency*	*Chairperson*	*Minutes by*	*Attendees*	*Media*
Team Lead	Team leads to discuss progress, issues, status with Project Manager	twice weekly	Project Manager	Action items taken by attendees	Team leads	
Project Team	Team members to discuss progress, issues, status with Team Lead	weekly	Team Lead	Action items taken by attendees	Team members	
Business Advisory Team	Discuss project progress, status, decisions, upcoming events	Once or twice monthly as required	Change Mgmt Lead, Business Lead	Change Mgmt Lead, Business Lead	selected Subject Matter Experts	SharePoint Governance Groups
Working Group	Discuss project progress, status, decisions, upcoming events	twice monthly	Change Mgmt Lead, Business Lead	Change Mgmt Lead, Business Lead	selected Subject Matter Experts	SharePoint Governance Groups
Steering Committee	Discuss project progress, status, decisions, upcoming events		Project Manager			
Defect Triage	Discuss defect progress, new defects	Weekly, daily 6 weeks before go live	Delivery Methodolgy Lead	defects updated, no minutes taken	owners of defects	SharePoint Defect Tracker
Inter-project CCB	Discuss migrations to production	Weekly, daily 6 weeks before go live.	Sustainment Lead	defects updated, no minutes taken	technical representative of interelated projects	SharePoint Defect Tracker

In addition the Business Lead on the project attends operational meetings with stakeholder groups. There are additional Change Management and Communication meetings that are scheduled throughout the project

The following reports are planned to be executed on a regular basis.

Reporting	*Purpose*	*Frequency*	*Author*	*Distributed to*	*Media*
Monthly Project Status Report	Report on overall assessment, schedule, budget, scope, resources, risks, deliverables, milestones, issues, accomplishments and next steps.	monthly	Project Manager	Steering Committee, all stakeholders	SharePoint Project Home Page
Davor's report to Roy	Informal report on overall assessment	twice monthly	Project Manager	Sponsor	email
Team Lead status reports	Accomplishments last week, plans for next week, issues	weekly	Team Leads	Project Mgr	email
Newsbulletins		monthly	Communication resource	All stakeholders	SharePoint Project Home Page

Additional communications are conducted by the Change Management Group and are documented as appropriate.

7. PROJECT GOVERNANCE AND ORGANIZATION

The following section outlines the project structure, roles and responsibilities with regard to how the project will be governed and how key decisions will be made and approved. As outlined in Figure 4 in section 6.2, the Project Organization has five overall bodies: Sponsorship and Steering Committee, Project Management Team, Core Project Team, Subject Matter Experts, and Business Advisory Team. The general role of each with regard to governance and decision making is outlined in the following table, and the description of individual roles and responsibilities is outlined in section 6.1.

Project Body	Governance / Decision Making Role	Responsibilities
Project Sponsors	To provide executive level direction to the project and secure project funding	• Champion the project at a senior executive team and corporate level • Assume ultimate authority over and responsibility

Project Body	Governance / Decision Making Role	Responsibilities
		for the project • Report project status to the Corporate Executive Team and the Board of Directors • Secure project funding • Resolve issues that require executive involvement or issues that cannot be resolved by the Steering Committee • Member of Project Steering Committee
Steering Committee	To provide Senior Executive-level direction to the PPM project and resolve issues that cannot be resolved by the Project Director and the project teams, or any issues that occur between the business units. These Senior Executives represent key business areas across BCH that will champion the project and provide approvals, advice and counsel throughout the project life cycle	• Champion the project at a senior executive level • Assume ultimate authority over and responsibility for the project • Make timely decisions • Approve written project scope changes that will have a materially negative impact on project milestones • Monitor project funding and expenses • Resolve issues that require senior executive involvement • Act to 'steer' the project into the organization, removing obstacles, and provide the necessary business unit experts or resources for the project • Meet monthly for Steering Committee and project status updates; additional meetings as required or warranted • General management and on-going oversight of the project
Project Initiator(s)	To manage the overall strategic direction of the project and relationships with the involved business units and key stakeholders at a senior management level	• Champion the project within the organization • Assume operational authority over and responsibility for the project • Report significant milestones or any major changes in the scope of the project to the Project Sponsors • Ensure the commitment of project participants from the business units • Set overall project direction • Guide and oversee the project • Approve project scope and objectives • Monitor overall project progress through regular status meetings • Review and decide upon Change Requests that materially affect the project budget and schedule

Project Body	Governance / Decision Making Role	Responsibilities
		• Ensure the removal of organizational barriers • Resolve issues that require senior management involvement • Attend and participate in project status meetings, as required • Chair and Member of Project Steering Committee
Working Group	Represents key stakeholders at a senior management level and provides support to the Project Initiator(s) in the key responsibilities noted above	•
Focus Teams	On occasion, teams are assembled to investigate specific areas and to make decisions on behalf of the business (for example, Detailed Requirements Focus Team). The Focus Team remains in place for as long as it takes to complete the specific objective and ends with sign off from the members. Multiple Focus Teams may be in place at one time. Individuals assigned to these Focus Teams may also be members of other PPM governance and business representation groups (i.e., SME, BAT, Working Group)	•
Business Advisory Team (BAT)	Provides a vehicle for the impacted business areas to give advice on impacts and implications of the PPM Project solution and plans. Members bring an overall business perspective and consider the strategic and broader considerations of the PPM project implementation. This team is not actively part of the project design team and can therefore bring an objective perspective and assessment of planned changes	• Review and provide feedback on key project deliverables through facilitated workshops • Provide a reasonableness check on to-be designs • Be a “sounding board” on proposed designs and change management plans • Surface risks to the project team and to their Director; recommend mitigation actions • Act as key communicators within their business areas in delivering project information when appropriate •
Subject Matter Experts (SME’s)	Represents the impacted business groups by providing business knowledge to the project, and making decisions on behalf of the business (where appropriate).	• Support the core PPM Project team and supplement with specific BC Hydro business knowledge during each phase of the project. • Act as a conduit for communication to/from the business areas. • Represent the needs and requirements of the Business Areas. • Demonstrate ability to problem solve and engage.
PSDP Practice	As outlined in the PSDP	• An expert in the subject field or in a position of

Project Body	Governance / Decision Making Role	Responsibilities
Leaders	Governance document.	technical experience conducive to advising on the Practice content, this individual provides technical oversight to the Practice. Experience is expected to be at a Specialist or Principal Engineer level. • Initial content, as well as all changes to content, within the Practice and associated templates must have the approval of the Practice Lead. Changes to formatting or packaging of the content will be reviewed by the Practice Leader to ensure there are no unintentional changes to the content. • Must ensure that the Practice remains consistent with any BC Hydro corporate policies. It is incumbent upon the Practice Leader to ensure proposed changes within the Practice are considered for impact against all other Practices in the program. • Will be responsible for ensuring that the Practice remains up-to-date with respect to best practices and corporate policy. • Will be a member of the Development and Review Committee or will appoint a designee • Will be consulted on matters of training and may be asked to speak at seminars promoting the subject matter of the Practice. • Will be a change agent for the Practice and will be actively engaged in continuous improvement for the Practice.
Core Project Team	• Is empowered to make design decisions necessary to develop and implement the most appropriate solution per the objectives, scope, and guidelines defined in this charter. "Key" design decisions will be reported to the Steering Committee for review. Design decisions involving organizational changes will be submitted to the Steering Committee for approval • Wherever possible, the Core Project Team members will be assigned full-time to the project. Where members are not full time, this will be managed as a project risk	• The Project Core Team is the primary working group and is comprised of individuals assigned either full time or near full time to the project • The team is empowered to develop and implement the best solution design based upon the scope, objectives and guidelines in this charter, and taking into account the input from the business and the capabilities of SAP • The team has responsibility for day to day delivery and outcomes of the project • Attend project status meetings

7.1. Team Organization and Responsibilities

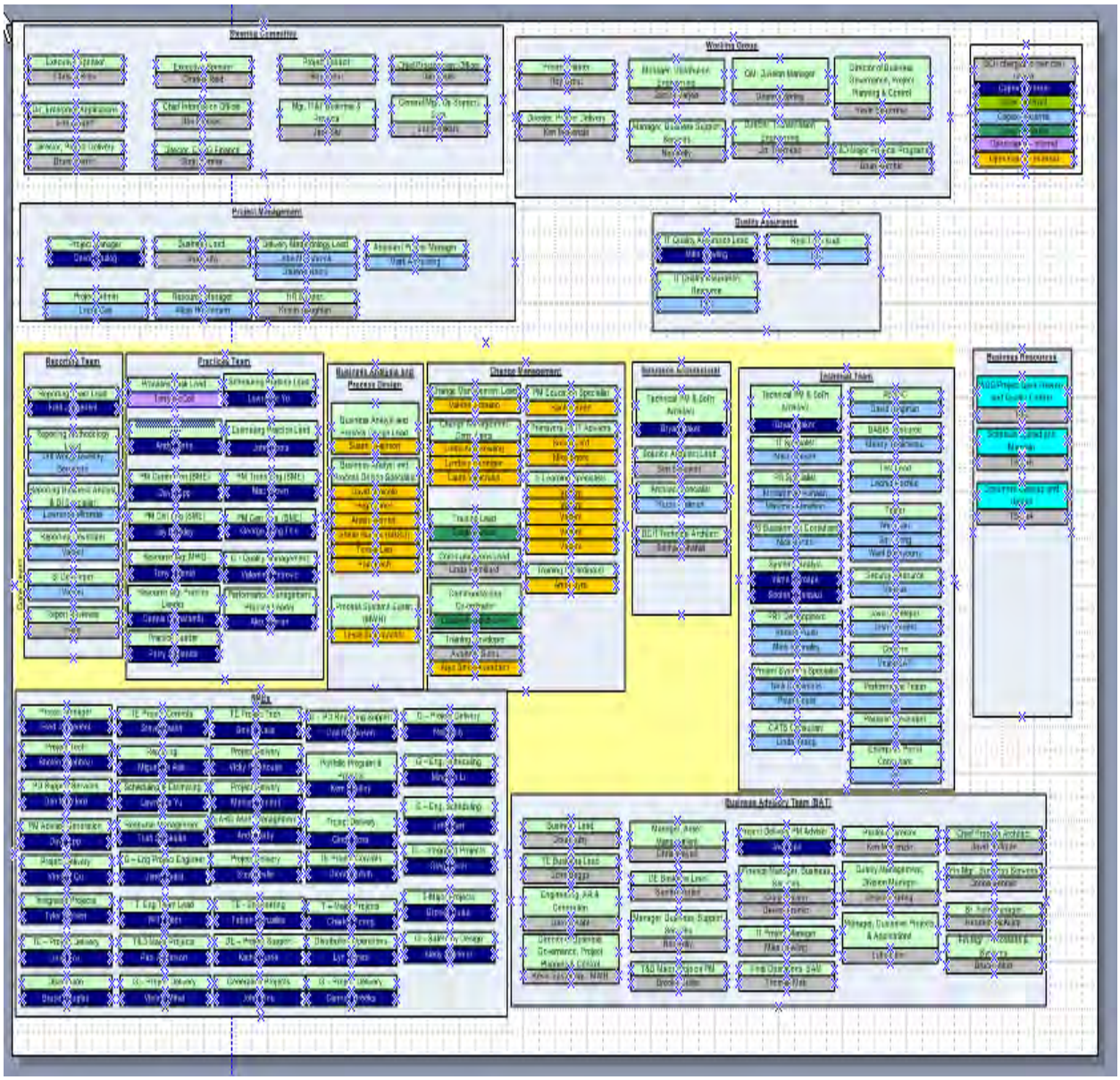
The roles and responsibilities for the Project are summarized in the following table:

Project Body	Roles	Responsibilities
Project Management Team	**Project Manager**	• Accountable for acceptable completion of the Project plan tasks on time, in scope and on budget • Responsible for ensuring coordination and integration of project deliverables and timelines with related initiatives identified in the Project Charter or, otherwise, as identified by the Steering Committee • Responsible for developing all project plans and managing the overall Project delivery, and achievement of targeted Project performance metrics • Responsible for escalation and coordination of issues to ensure timely resolution • Maintains issues log, reports on project risks, and ensures mitigation plans are developed and implemented on a timely basis • Works closely with the SAP Enterprise Lead to ensure the Project approach and methodology aligns with BC Hydro standards and is reusable on other later SAP implementation projects • Works closely with the Quality Assurance Lead to ensure the Project Quality Management Plan aligns with BC Hydro standards and is integrated with the overall project delivery • Supports change management and communications • Will be accessible to the Project Team during all business hours, and otherwise within 24 hours, with reasonable allowance to be made for pre-scheduled time off
	Project Management Support	• Reports to the Project Manager • Supports Project Manager as required in performance of his role, including drafting of status reports, updates to logs and schedules
	Business Lead	• Provides oversight to ensure that business process and system design meets operational requirements, and consistent with Project objectives and principles • Receives and provides input to related projects to ensure consistency / alignment of process designs • Approves process designs • Provides or identifies subject matter expertise as required • Supports change management and communications • Determines which design decisions are to be categorized and managed as “key” design decisions • Attend project status meetings
	Technical Lead	• Provides oversight to ensure that system design is consistent with BCH technical standards and policies and is consistent with Project objectives and principles • Engages required technical team members and other BCH and external expertise as required to develop and confirm interface and data conversion specifications • Manages systems analysts for legacy systems analysis • Receives and provides input to related projects to ensure consistency / alignment of technical designs • Approves technical designs

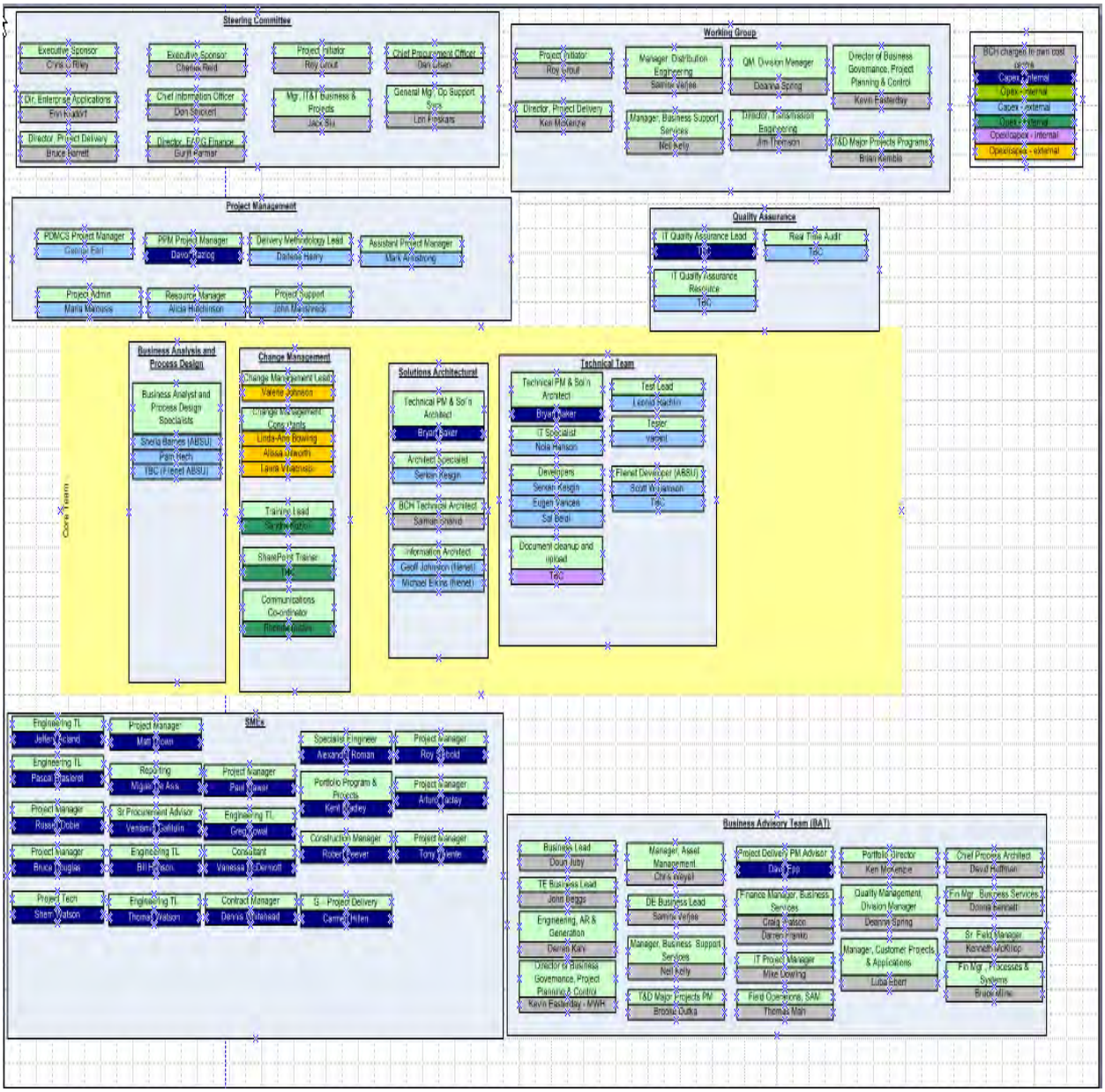
Project Body	Roles	Responsibilities
		• Provides or identifies subject matter expertise as required • Be an active member of PPM project team • Attend project status meetings • Supports change management and communications • Determines which technical design decisions are to be categorized and managed as "key" design decisions
	Change Management Lead	• 'Champion' the project • Use BCH best practice tools and processes for collection, analysis and documentation of organization change management activities, including communications and training • Be an active member of PPM project team • Identify and manage additional change management, communications and training resources as required • Attend project status meetings

7.2. Team Structure

The PPM and PDMCS Project Organization is described below. Additional project resources will be added as are required. The organization charts are updated as of July 26, 2011.



PPM Wave 2 Organization Chart



PDMCS Organization Chart

8. PROJECT MANAGEMENT

The Project Manager is accountable for the development, execution, and monitoring of the project management plans in keeping with the governance structure outlined in this charter. The following required elements will be included within the appropriate management plan.

8.1. Progress Reporting

- The project will report progress via periodic status reports, which will be prepared to coincide with the Steering Committee meeting schedule.

8.2. Scope Control

- Project scope will be controlled via the Project Manager through an escalation process to the Steering Committee.
- Proposals to amend the project scope will be documented by the project manager and tabled for review and approval by the Steering Committee.

8.3. Issue Management

- The project manager will arrange for a formal issue log of project issues to be maintained along with a documented Issue Procedure.
- High priority open issues will also be reflected on current status reports to ensure visibility to the Steering Committee.

8.4. Risk Management

- The project manager will arrange for a formal project risk register to be developed and maintained.
- This will be done in coordination with BC Hydro's risk management group to ensure a consistent and rigorous approach to risk
- Key risks (high impact and/or high probability) will also be reflected on current status reports to ensure visibility to the Steering Committee.

8.5. Quality Assurance

- The Quality Assurance Lead is responsible for the development, execution, and monitoring of the Quality Management Plan.

- The Quality Assurance Lead will provide periodic updates to the Steering Committee, as outlined in the QM Plan.
- The OCIO IT QA role will interface to the project through this role and will have the ability to escalate issues independently to the Steering Committee, if needed.

8.6. Project Management Information System (PMIS)

- The project will use a combination of tools for the PMIS, including:
  - MS Excel for cost and resource planning and tracking (costs will be captured in PeopleSoft financials project costing module)
  - Primavera 6 for schedule management
  - MS Word documents for status reporting
  - SharePoint for the Project Register and for Issue Management.

9. BUDGET

A revised budget of $ 26,890k ($5,329k OMA, and $21.561k Capital) has been approved via the current business case for the entire Project & Portfolio Management Project.

The Project Budget will be managed via the Project Cost Plan and reported to the Steering Committee via the regular status reporting procedure.

APPENDIX A – REFERENCE DOCUMENTS

Version	Document Name	File Location
2009-December 10, Version 1.1	Project & Portfolio Management (PPM) Engineering Construction Projects Implementation Phase 3 – Solution Implementation	SharePoint: Project Management and Governance 2.0931 Business Case > PPM Business Case Phase 3 Original Business Case
May 25, 2009 Version 2.2	PPM Project Charter Phase 2	SharePoint Wave 2 Project Documentation 0.0.1 Project Initiation Project Charter Wave 2
May 11, 2009	PPM Communication Program	SharePoint Wave 2 Project Documentation 8.7A Communication Work Package. Communication Program
April 13, 2011	PPM Revised Business Case	SharePoint Project Management and Governance PPM_Revised_Business_Case
Mar 19, 2011	PDMCS Business Case	SharePoint Project Management and Governance PDMCS_Business_Case

Project Title:	Project & Portfolio Mgmt Project (PPM)		
SAP Project #:	YM-80025	**Project Manager:**	Davor Razlog

Change Notice:

From: Davor Razlog

To: Roy Grout

Originating Documents:

Description of change (what?):

Extend Design phase for the Business Warehouse to July 1, 2011.

Move go-live of BW reporting to last 2 weeks of September, 2011.

Reason for change (why?):

BW Design work is more complicated than originally anticipated due to lack of documentation of existing BW and the complexity of merging projects that stay in SAP with projects that are moving to P6 into an existing structure To a lesser extent delays in report specification due to longer than anticipated approval processes by the business have delayed finalization of the BW requirements.

This does not include the delivery of Milestones nor SharePoint integration in BW.

Impact Assessment:

Schedule:	This is not a scope change but a schedule change. Based on the current amount of work it is not possible to meet the original go-live date of June 27, 2011.
Cost & Business Case:	No Change
Resources:	No Change

Inquiry of Expenditures related to the adoption of the SAP Platform

Record of Client Agreement:

Meeting: Steering Committee date June 2, 2011

Attendance: Discussed and agreed to at Steering Committee meeting

Project Initiator:	Roy Grout	2011-11-28 Date
PPM Project Manager:	Davor Razlog	2011-11-24 Date

Project Title:	Project & Portfolio Mgmt Project (PPM)		
SAP Project #:	YM-80025	**Project Manager:**	Davor Razlog

Change Notice:

From: Davor Razlog

To: Roy Grout

Description of change (what?):

An additional wave (2C) is required to complete design and development of SharePoint based functionality for the PPM Project. These deliverables include such items as Change Log, Risk Log, Jumping off Page and the interface to BW for additional reporting with SharePoint based information. These are deliverables that are not part of the PDMCS Project but within scope of PPM. This was originally to be delivered in October but is now scheduled for mid-December in alignment with the PDMCS Go Live date.

Reason for change (why?):

The schedule delay is due to problems finding SharePoint resources and hence starting the work 2 months later than originally planned.

Impact Assessment:

Schedule:	This is not a scope change but a schedule change. Original delivery date was end of October. The new delivery date is week of December 19, 2011.
Cost & Business Case:	This functionality was expected with PPM. No change to cost.
Resources:	No Change

Record of Client Agreement:

Meeting: Steering Committee meeting June 2, 2011

Attendance: Discussed and agreed with Steering Committee members

Project Initiator:	Roy Grout	2011-11-28 Date
PPM Project Manager:	Davor Razlog	2011-11-24 Date

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PPM_CR_3_Portfolio_Mgmt

Project Title:	Project & Portfolio Mgmt Project (PPM)		
SAP Project #:	YM-80025	**Project Manager:**	Davor Razlog

Change Notice:

From: Davor Razlog

To: Roy Grout

Description of change (what?):

G-TLT and T&D TLT have opted to defer the work related to the Portfolio Manager Role Definition due to workload with on-boarding. T&D sees work progressing through practice development. Work will likely be initiated after PPM team has rolled off. An issue has been created and identified to be taken on by Sustainment group.

Reason for change (why?):

Neither G nor T&D have the time to work on this at this time as the

Impact Assessment:

Schedule:	This will not affect the project schedule.
Cost & Business Case:	Even though this is a reduction in scope, there is no change to project cost as the majority of the work was to be on the business side which does not charge the project.
Resources:	No Change

Record of Client Agreement:

Meeting: Working Group Oct 31, 2011

Attendance: Discussed and agreed with Working Group members

Project Initiator:	Roy Grout	20 Feb / 12 Date
PPM Project Manager:	Davor Razlog	2012-02-23 Date

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PPM_CR_4_Recurring_Cap_WO_D

Project Title:	Project & Portfolio Mgmt Project (PPM)		
SAP Project #:	YM-80025	**Project Manager:**	Davor Razlog

Change Notice:

From: Davor Razlog

To: Roy Grout

Description of change (what?):

Spend up to 100 hours to investigate and recommend the solution or workaround that resolves the use of recurring capital work orders by Distribution organization on capital projects. PPM solution is compatible with standard capital Work Orders that settle to projects while recurring capital work orders settle to asset or cost centre. The scope includes all major Distribution projects that are applicable to onboard to PPM solution. This change request does not include broader transformation for Distribution.

Reason for change (why?):

A solution for major Distribution projects is required. Major D projects need this resolution in order to onboard to the PPM solution. It is necessary to consider the impacts of switching from capital to standard work orders. Originally the PPM team assumed the standard work order was being used.

Impact Assessment:

Schedule: This will not affect the project schedule.

Cost & Business Case: 100 hrs at $16,150

Resources: Internal Resources

Record of Client Agreement:

Meeting: Steering Committee Nov 3, 2011

Attendance:

Project Initiator:	Roy Grout	19 January 12 Date
PPM Project Manager:	Davor Razlog	2012-01-19 Date

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PPM_CR_5_Purchase_Acumen

Project Title:	Project & Portfolio Mgmt Project (PPM)		
SAP Project #:	YM-80025	**Project Manager:**	Davor Razlog

Change Notice:

From: Davor Razlog

To: Roy Grout

Description of change (what?):

Purchase Acumen Fuse software for business groups to perform schedule quality checks as part of quality assurance and quality control processes. Acumen Fuse software performs industry standard analysis of Primavera schedules. Three copies of the software are to be purchased – one each for Project Control Groups in T&D and G and for PPM Sustainment Group.

Reason for change (why?):

Project Controls groups are looking for standard tools that can quickly perform quality checks against a project schedule based on common metrics.

Impact Assessment:

Schedule: This will not affect the project schedule.

Cost & Business Case: $15,456 – 3 copies + tax and 1st year maintenance.

Resources: None

Record of Client Agreement:

Meeting: Project weekly meeting with Project Control Stakeholders (Dec 2011)

Attendance: Davor Razlog, Bryan Baker, Dennis Chinatambi, Neil Kelly

Project Initiator:	Roy Grout	19 January 12 Date
PPM Project Manager:	Davor Razlog	2012-01-19 Date

BC Hydro

EMPower Project

Project Charter (Version 1.0)

DRAFT

TABLE OF CONTENTS

1. PROJECT OVERVIEW 4

2. PROJECT OBJECTIVES AND PRINCIPLES 4

2.1. PROJECT OBJECTIVES 5
2.2. GUIDING PRINCIPLES 5
2.3. MEASURES OF SUCCESS 7
2.3.1. Project Success Measures 7
2.3.2. Business Success Measures 8

3. HIGH-LEVEL SCOPE 9

3.1. BUSINESS PROCESS REDESIGN SCOPE 10
3.2 CHANGE MANAGEMENT SCOPE 10
3.2.1. Organizational Change 10
3.2.2. BC Hydro Change Management 10
3.3. HR BUSINESS PROCESS SCOPE 11
3.4. INTERFACE SCOPE 12
3.5. DATA CONVERSION SCOPE 12
3.6. REPORTING SCOPE 13
3.7. OUT OF SCOPE 13

4. CONSTRAINTS AND DEPENDENCIES 13

4.1. CONSTRAINTS 14
4.2. PROJECT DEPENDENCIES / RELATED INITIATIVES 14
4.2.1. Other Related Initiatives 14

5. PROJECT APPROACH 15

5.1. OVERALL APPROACH 15
5.2. HIGH LEVEL PROJECT PLAN 16

6. PROJECT ORGANIZATION AND GOVERNANCE 16

6.1. PROJECT ORGANIZATION BODIES ..... ……17
6.2. DECISION MATRIX 18
6.3 PROJECT MANAGEMENT 19
6.3.1 PROGRESS REPORTING ..... .19
6.3.2 SCOPE CONTROL ..... .19
6.3.3 ISSUE MANAGEMENT ..... .19
6.3.4 RISK MANAGEMENT ..... .19

7. BUDGET 19

9. BENEFITS REALIZATION 19

DRAFT

Document Information and Revision History

Document Owner	Project Manager, Cindy Chapman
Document Purpose	The Project Charter defines the project scope, objectives, project team responsibilities, constraints and dependencies, and Project Manager's authority.
File Name(s)	1.1.2 EMPower Project Charter.doc
Stored at	J:\Finance\SAP Program\HCM\1 Project Prep\Project Management\Project Charter
Original Author(s)	Cindy Chapman

Revision History:

Version	Date	Comments

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1. PROJECT OVERVIEW

This Project Charter describes the BC Hydro EMPower Project, defining its objectives, constraints, high level scope, and governance procedures.

Like other North American utilities, BC Hydro faces significant challenges as we move into the future: Increased demand for electricity despite economic uncertainty, aging infrastructure that requires a significant investment, emerging new technologies that will change how we deliver our service and an aging workforce amid a shrinking workforce pool.

To address these challenges, BC Hydro will need a highly qualified, diverse, engaged and flexible workforce that thrives and excels in a team environment. BC Hydro Human Resources is accountable to recruit, retain and develop that workforce.

Human Resources business processes including recruiting, training, workforce planning, payroll processing and benefits administration, and the technology to support those processes form the foundational backbone of the Human Resources function. There are currently multiple business processes, multiple systems and databases with no "single source of truth" for data. There is significant business value in redesigning the current business processes including improved information for management, significant process efficiencies to gain and enabling HR to change its Service Delivery Model to more effectively deliver its services, manage the employee life cycle and report on key performance indicators (KPIs) and metrics in a reliable and consistent manner.

Business Process Redesign will be the focus of the EMPower project and will be a significant effort. The Business Process Redesign effort will focus on developing consistent processes across the organization, eliminating inefficient manual processes and reshaping the way that HR provides services to the organization while leveraging the HR technology. The impacts of Business Process Redesign will impact the structure of the HR organization.

The EMPower project will follow the FSR and PPM methodology that has been modified to fit within the existing BC Hydro ITDSP Project Methodology. The project will also leverage the FSR and PPM approach and collateral adjusted as needed. The project is currently in the Project Prep phase which started January 4, 2010 with a scheduled completion date of March 31, 2010.

The project prep phase deliverables include the following:

- Project Charter
- Initial Project Plan (detailed for the Analyze/Design phase and general for subsequent phases)
- High Level Scoping Document
- Resource Plan
- Identify Business Process Redesign opportunities – high level business process solution
- High level technology solution

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- Change Management / Communication Strategy
- High Level Business Case with costs and benefits

2. Project Objectives and Principles

2.1 Project Objectives

The High Level Objective of the EMPower project is to transform the way in which BC Hydro delivers its HR Services to the organization through effective leveraging of the HR technology. The detailed objectives are as follows:

- Ensure the processes and system framework and design integrate the business needs of end users, i.e. managers and employees, in addition to meeting HR needs
- Ensure redesigned business processes are simplified and made consistent across the organization
- Provide employees and managers with timely self service access to the resources and information they require with a consistent, intuitive user experience
- Ensure that processes, resources and information are simpler, faster and easily accessible by HR staff to provide the data required to manage the workforce (forecasting, planning, managing our business decisions, report on HR activities and ROI/total spend to the regulator and shareholder)
- Redesign business processes so that BC Hydro leverages technology to deliver more efficient HR Services; eliminating manual and paper based processes
- Design and implement a fully integrated Human Resource Information System that links people to business processes and the technology to support the business processes
- Provide a scalable system that eliminates the constant need to redesign
- A single source of data to provide reporting on key performance indicators (KPIs) and metrics in a reliable and consistent manner

2.2 Guiding Principles

In meeting the Project Objectives, the Project Team will endeavour to develop a solution that adheres as closely as possible to the following guiding principles:

- Business Planning Drives Business Process design

The business plans and objectives drive the business process architecture. They define the metrics to which the processes must deliver to. Conservation results, cost

CONFIDENTIAL –DRAFT DOCUMENT

Inquiry of Expenditures related to the adoption of the SAP Platform Page 5 of 20

efficiencies, operate efficiencies, and maximizing the team metrics must be enabled by the business process and technology.

- Business Process is defined both in terms of Enterprise and Line of Business

Each business process can be defined as meeting enterprise and BG needs. They can have different levels of design ranging from 100% BG driven to 100% enterprise driven base upon what meets the needs of the enterprise **and** BG. When analysing our business processes, we will define how much affects the enterprise and the business group. For example, an employee expense process might be 100% enterprise designed whereas a work scheduling process might be 60% the same across the enterprise and 40% specific to a business group.

- End to End Business Process Design

Each business process will be looked at from "source' to "source". For example, end customer self service is integrated into the process so information is delivered, processed at source of creation.

- Business Process Design Drives the IT&T Strategy

The cross functional business processes designed for the future business drives the development of the IT&T architecture. The IT&T architecture includes: user access, applications, information/data, infrastructure and telecommunications.

- 80/20 Rule

Deliver solutions that will meet 80% of the business process needs. While we seek a very high quality of solution, we know that customer need, time and dollars must be met.

- Design for "Tool Time"

Most business processes have a "transactional" nature to them. Most of the transactional processing can be enabled by technology. This will free up our team to spend time on getting the job done and on knowledge-based work.

- Single Source of Information

Incorporate single source of "truthful" information. We may replicate that data in order to be to meet business process needs but will stand behind a single truth.

- Test & Validate Current IT&T Investments

Test and validate the current IT&T investments first to solve the business process needs. In the event that the current IT&T architecture cannot deliver to the business needs in an effective and efficient way, we will look to buy/obtain proven technologies. We will leverage "bleeding edge" technology only in an applied R&D environment.

DRAFT

- Short and Long Term Strategic investments

In order to keep operating and improving the business it is necessary to implement incremental improvements and quick hits that support the business. These would be considered short term improvements that would be implemented and have paybacks attained in 1-3 years. They may be replaced by the longer term strategies in the 3+ year's time frame.

- Consistent and Effective Governance

Overall governance of the IT&T investment ensures we utilize the resources in the most effective manner for the overall organization. Having a governance structure to set priorities, oversee the allocation of resources, address the interdependencies of the project work and provide oversight to the operations provides a foundation

- Utilize business processes inherent to the design of the HR product

- Minimize customization to gain the advantages related to simplicity, and allowing for future integration – core modifications should be avoided where at all possible and must be approved by Steering Committee

- Design the HR system to maintain flexibility, in particular the ability to change the system in the future to adapt as the BC Hydro business environment evolves
- HR solution will maximize viable or appropriate "Self Service" opportunities
- HR solution will be developed to enable integration into other BC Hydro workstreams
- Manage the project based on a "One Hydro" basis, meaning the overall interests of BC Hydro will prevail in any case where requirements of individual Business Group interests may differ

2.3 Measures of Success

2.3.1 Project Success Measures

The success of the project will be assessed based on achieving the following measures:

- All business processes that are affected by the Scope of the project, have been determined to need redesign and have been prioritized to include in each phase based on impact to project and feasibility have been optimally redesigned.

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- All in scope business processes must be migrated to the new HR system or the Third Party tools with automated integration into the new HR system.
- Feedback from Business Stakeholders and HR has been included in the HR solution to provide a consistent, intuitive user experience
- HR technology has been implemented in a way that enables the HR Organization to optimize the delivery of HR Services to the BC Hydro organization
- The processes framework and design integrate the combined needs of end users, i.e. managers and employees
- HR business processes and technology provide a single source of data enabling reporting on key performance indicators (KPIs) and metrics in a reliable and consistent manner
- The delivered HR technology is scalable system and does not require constant redesign
- Communication and change management is completed and analysis indicates a high level of business readiness prior to go-live. All end-users are trained and ready to use the new processes and systems.
- All required system interfaces, or interim workarounds as approved by the Steering Committee, must be implemented to support sharing of data between systems.
- Project is delivered on time and within budget
- Project risks identified and mitigated or managed
- Post Implementation transition and post-implementation sustainment strategies are approved by the Steering Committee, Project Executive Sponsor and key stakeholders, and implemented in time to support go-live.
- System project knowledge successfully transferred to enable sustainment

2.3.2 Business Success Measures

The Business Success Measures will be documented in the Benefits Realization Plan once the final version of the Business Case has been completed. The following preliminary measures will be updated at that time:

- The HR Organization is able to provide improved service to the organization, a single source of accurate data and efficient business processes

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- The HR Organization has redefined their Service Delivery Model leveraging redesigned HR Business Processes and the HR technology
- Employees and managers have timely access to the resources and information they require with a consistent, intuitive user experience
- Resources and information are easily accessible by HR staff to provide the data required to manage the workforce
- Reporting on key performance indicators (KPIs) and metrics in a reliable and consistent manner is available and utilized for decision making
- Post-implementation analysis indicates that end-users have a high level of understanding and acceptance of the new HR system and processes. It is anticipated that post implementation analysis will occur at least on 6, 12 and18 month increments after go-live.
- Post-implementation analysis indicates that new business processes implemented under the Project are operating effectively, are easily sustainable, have enabled the HR organization to effectively deliver its services, manage the employee life cycle and report on key performance indicators (KPIs) and metrics in a reliable and consistent manner as documented in detail in the business case.

3 HIGH-LEVEL SCOPE

The focus of the EMPower project is Business Process Redesign maximizing self service opportunities in order to transform the HR Service Delivery model. The EMPower project will include the implementation of a new HR technology to be leveraged to support the defined objectives The business processes to be included in the project are detailed in the HR Business Process section below. In addition to an HR ERP solution we will also be implementing several Third Party tools that integrate with the HR solution and enhance the overall functionality to be delivered. These Third Party tools have also been included in the Scope section below.

Business Process Redesign will be a significant effort on the EMPower project. The Business Process Redesign effort will focus on developing consistent processes across the organization, eliminating inefficient manual processes and reshaping the way that HR provides services to the organization while leveraging the new HR platform.

Change Management will also be a critical and significant effort on the EMPower project. Both Organizational Change to support the change in the HR Service Delivery Model as well as the change impact to the organization touching all employees via Employee Self Service and managers specifically via Manager Self Service.

The following section outlines the high level scope boundaries for the project. Any changes in this high level scope that violate these boundaries must be approved by the Steering Committee. The detailed project scope will be documented during the project

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Blueprint phase and will be maintained by the Project Manager via the scope control process.

3.1 Business Process Redesign Scope

3.1.1 All business processes that are affected by the Scope of the project will be reviewed to determine: 1)need for redesign 2)prioritized to include in each phase based on impact to project and feasibility

3.1.2 Processes will be documented End-to-End (i.e. front end process to provide data to the HR system, HR system process, backend processes that occur after system processing)

The descriptions of these processes will be included in the detailed Business Process Redesign Design Phase Document.

3.2 Change Management

3.2.1 Organizational Change Scope

- Drivers for HR Organizational Change
  - Business Owners for HR Process towers
    - Develop this knowledge in house
    - Required regardless of the long term sustainment model
    - Provides the ability to implement additional Governance of a sustainment model that outsources system processing
  - Changing the way we provide HR services to the Company impacts the resources that currently provide those services

Any recommendations from the project that require organizational changes to support the new processes must be approved by the Steering Committee.

3.2.2 BC Hydro Change Management

There will be change impact to the organization touching all employees via Employee Self Service and managers specifically via Manager Self Service.

3.3 HCM Business Process Scope

The project scope includes the implementation of the HR business processes required to replace existing HR systems and support the overall project objectives. Based upon the work performed thus far during the initial Project prep phase, the HR processes in scope are:

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Inquiry of Expenditures related to the adoption of the SAP Platform Page 10 of 20

- Recruiting Processes:

  - Initiate, plan, and post recruitment opportunity
  - Attract and manage relationships with job seekers
  - Job seeker identifies posted opportunity, updates resume, applies, and tracks application progress
  - Complete recruitment activities such as screening, interviews, assessment, pre-employment checks, and offer processing
  - Monitor and assess recruitment effectiveness through reporting

  – Organizational Management:
    - Organizational Plan
    - Position Control
    - Workforce Planning
    - Jobs / Job Families
  – EE Lifecycle Business Processes:
    - New hire processing (Assumption: data passed from Recruiting to Master Data)
    - Other EE Life Cycle Changes: Change of Status,Termination, Rehire, Retirement
  – Employee data management:
    - Employee data: Updates to employee data (Address, telephone, emergency contact, direct deposit distribution to banks)
  – EE Time Capture and Approval:
    - Time entry:by employees with access; by time admins for employees with no access
    - Time approval by managers
    - Processes and systems for work management and project management - incorporate their requirements in overall design
  – Payroll Processing:
    - Payroll processing (gross to net)
    - Post-payroll processing (E.g. G/L Posting)
    - Payroll year-end processing
  – Benefits:
    - Retiree benefits enrollment and processing
    - Benefits Processing

  – Talent Management processes
  – Performance Management processes
  – Succession Planning processes
  – Learning Management processes

- Systems and Technical Scope:
  – Employee Self Service “ESS” and Manager Self Service “MSS”
  – Security:
    - To support ESS / MSS

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    - All access to HR specific data
    - Position based security to support all business processes (not just HR)
  - Reporting:
    - Standard reports and metrics
    - Diversity reporting
    - Ad hoc / Monthly / Quarterly / Annual Reporting

  - Interfaces with other systems
  - Third Party Tools as required:
    - Org Charting / Org modeling / Succession Planning
    - Resume Mirror - resume parsing tool that will be integrated with the HCM Recruiting process
    - Adobe Interactive Forms – while BC Hydro currently owns Adobe Forms that does not include the Interactive Forms that are critical for the Recruiting process
  - Training to support implementation
  - HR Business Intelligence – Data Warehouse to support reporting

- Project Dependency
  - Employee Safety and Health

3.4 Interface Scope

There are currently 29 legacy interfaces which include HR data. Interfaces required to support the HR business processes will be identified in the detailed scoping document and will be detailed in the Inventory of Reports, Interfaces, Conversions, Enhancements and Forms during the Analyze / Design phase of the project. Interface development will utilize ESB middleware technology to provide more consistent, scalable interfaces.

It is in scope to evaluate the redesign or change of the legacy systems to which the HR system will connect. Each interface will be evaluated on an individual basis and where it is appropriate and feasible legacy systems will be changed to support the new HR system data.

3.5 Data Conversion Scope

The population to be included in the business processes and supporting technology is a decision that needs to be made by the Steering Committee. Current active employees housed in the Peoplesoft system are definitely in scope for the HR data conversion while inclusion of retirees, contractors, terminated employees, Powerex, Powertech, Columbia Hydro Construct, Casual Employees and Board Members areTBD. While some employee data currently exists to support the travel expense roll-out included in the FSR project, all of the employee attributes were not converted so an overall conversion strategy is required. Additionally, enterprise and organizational structures were also created to support the Travel expense roll-out. These structures will be redesigned to

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meet the long term needs of the BC Hydro organization and employees personnel records updated. The Data Conversion Strategy document will be developed during the Analyze / Design phase of the project.

Whether or not to convert any historical data into the new HR system including from the external recruiting system will need to be a decision by the Steering Committee. Not converting historical data is best practice and if that is the strategy decided upon there will also need to be a decision regarding where to house the historical data from the Peoplesoft and other HR systems.

The manual cleanse or "clean-up" of any data prior to its conversion into the new HR system should be the responsibility of the business with oversight by the project team. This represents a risk to the project, and so the project will provide the business with best practice processes and will establish management procedures to coordinate and track data clean-up activities.

3.6 Reporting Scope

The project will provide a limited number of agreed to "Critical Required Reports" to support the implementation. These reports will be provided with a combination of Standard system delivered reports, custom developed reports, Queries and reports delivered by identified Third Party tools to be integrated with the HR solution. After go-live the business will have the opportunity to become comfortable with the system and identify additional reporting requirements.

3.7 Out of Scope Items

- Background Check Service
- Duet

4 CONSTRAINTS AND DEPENDENCIES

This section outlines the key external constraints and dependencies that may impact this project and its ability to be completed successfully. Each item represents a risk to the project, and will be tracked and managed through the project Risk Management Plan.

4.1 Constraints

4.1.1 The Change Management practices for the project will need to align with the standard Enterprise-wide Change Management Network practices.

4.1.2 Availability of BC Hydro resources on a full time basis is a constraint for the project.

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4.2 Project Dependencies / Related Initiatives

4.2.1 Project Dependencies:

There will be numerous initiatives throughout the project to develop data to support the new business processes and technology. Examples of this include job families and competencies. The project will provide direction and oversight for these initiatives.

4.2.2 Other Related Initiatives

There are numerous other projects underway or pending in BC Hydro that may impact the EMPower Project. These are listed in the table below:

Initiative	Relationship
Worksoft Testing Tools and SAP Solution Manager	The OCIO has a program underway to select, deploy, and operate a standard set of tools for both testing and Project documentation via SAP Solution Manager. This project will utilize this new technology and will be developed through a new organizational group.
Project and Portfolio Management (PPM)	BC Hydro's project management processes and systems are currently tightly integrated with PeopleSoft Financials. The PPM project is expected to recommend and implement new project management systems, which will then need to be integrated with SAP and/or PeopleSoft, depending on the timing of PPM delivery.
Other BC Hydro Business Processes	BC Hydro has identified many business process areas for potential redesign with supporting technology so other significant initiatives may be initiated over the course of this project. Any project that involves design or implementation activities that will be done in parallel with the EMPower represent a potential risk to this project.

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5 PROJECT APPROACH

5.1 Overall Approach

The EMPower project will follow the same methodology utilized by the FSR and PPM projects that has been modified to fit within the existing BC Hydro ITDSP Project Methodology. The project will be executed following the standard seven ITDSP phases:

Project Phase	Phase Deliverables
1. Plan	• Project Charter • Initial Project Plan (detailed for the Analyze/Design phase and general for subsequent phases) • High Level Scoping Document • Resource Plan • Identify Business Process Redesign opportunities – high level business process solution • High level technology solution • Change Management / Communication Strategy • High Level Business Case with costs and benefits
Analyze / Design	• "As-is" process documentation • Key Decisions • 'To be' process designs • Master data / organizational design • Conceptual cost flow design • Reporting Requirements • Functional specifications for development of Forms, Reports, Interfaces, Conversions, Enhancements • Technical plans • Change Management and training plans • Realization Phase detailed plans • Finalized Business Case

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Project Phase	Phase Deliverables
3. Develop	• Final configuration and unit testing • Technical developments • Training materials created • Authorizations development • Gap analysis & business transition plans • Cutover planning / Final Prep planning • Final prep detailed plans
4. Test	• Systems / Integration / Parallel Testing • Regression testing of existing systems • System performance testing • User acceptance • Training delivery •
5. Implement	• Execution of transition plans • Cutover preparation and test execution • Cutover execution • Detailed Go-live and Support planning
5. Warranty / Stabilize	• Initial production support • Completion of transition plans • Transition to sustainment • Project closure

5.2 High Level Project Plan (ALL HR Business Processes)

All HR Business Processes included in initial implementation except Performance Management, Succession Planning and Learning Management Processes along with Business Intelligence – Advanced Reporting to be implemented in subsequent phases.

Initial Implementation:
January - May 2010: Project Planning
June – November 2010: Design Phase
December 2010 – April 2011: Develop Phase
May 2011 – August 2011: Testing Phase
October 2011 (1st Payroll in Oct.) – Go-Live
October 2011 – December 2011: Warranty Phase

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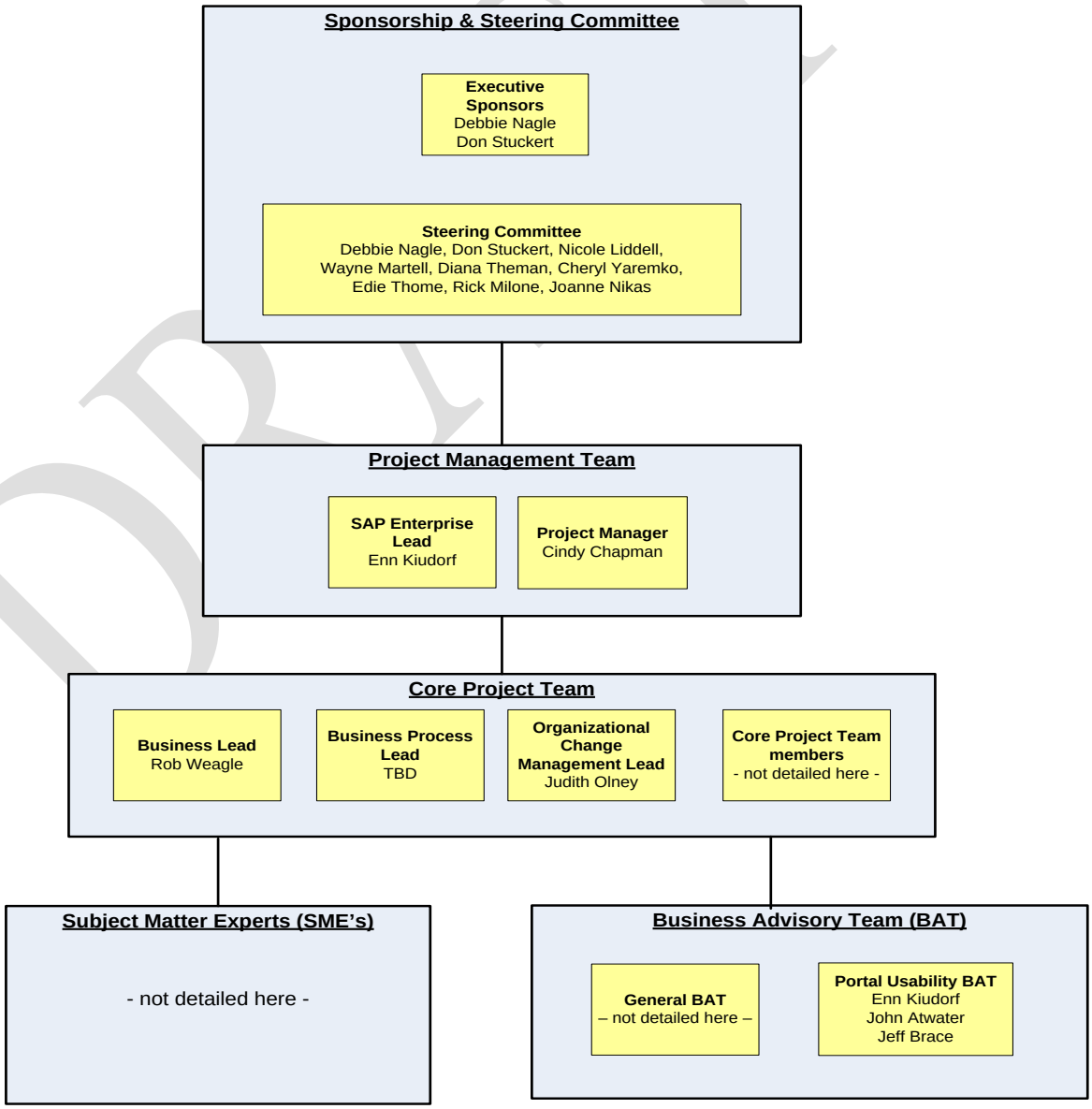
Subsequent Phases Business Processes and Advanced Reporting:
August 2011 – March 2012

6 PROJECT ORGANIZATION AND GOVERNANCE

The following section outlines the project organization bodies and how key decisions will be made and approved.

6.1 Project Organization Bodies:



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Note: Organizational Chart with Core Team members, BAT, SME's, etc… will be included in the Business Case.

6.2 Decision Matrix

Role	Responsibility	Turnaround Timing
Executive Sponsor	• Provide final and binding decision making authority where the Steering Committee is unable to reach consensus	• Critical / High: 24 – 48 hrs. • Med: 1 week • Low: Next Steering Committee Meeting
Steering Committee	• Reviews and, if appropriate, approves requested scope changes • Reviews and approves project costs, and ensure business case and adequate corporate funding is in place • Approves significant changes to project budget and timeline • Will review and approve all design decisions involving changes to the current organization structure • Will review and approve all Key Decisions • Determine the need and timing of any necessary internal or external authorizations (for example, from the ET, the BC Hydro Board of Directors, or the BC Utilities Commission)	• Critical / High: 24 – 48 hrs. • Med: 1 week • Low: Next Steering Committee Meeting
Core Project Team	• Empowered to make design decisions necessary to develop and implement the most appropriate solution per the objectives, scope, and guidelines defined in this charter. "Key" design decisions will	N/A

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	be reported to the Steering Committee for review	

6.3 PROJECT MANAGEMENT

The Project Manager is accountable for the development, execution, and monitoring of the project management plans. The standard required elements of project management will be included within the appropriate management plan including: Progress Reporting, Scope Control, Issue Management, and Risk Management.

6.3.1 Progress Reporting – reported via biweekly and monthly status reports, which will be prepared to coincide with the Steering Committee meeting schedule

6.3.2 Scope Control - project scope will be controlled through an escalation process to the Steering Committee.

- Change requests will be documented for approval by the Steering Committee.

6.3.3 Cost management – project budget will be managed closely by the project manager to ensure the project is delivered on budget

6.3.4 Issue Management - formal issue log of project issues to be maintained

- High priority open issues will also be reflected on current status reports to ensure visibility to the Steering Committee

6.3.4 Risk Management - formal project risk register will be developed and maintained

- Will be coordination with BC Hydro's risk management group to ensure a consistent and rigorous approach to risk

- Key risks (high impact and/or high probability) will also be reflected on current status reports to ensure visibility to the Steering Committee

7 BUDGET

An F'10 budget of $1.2 million ($.6 M OMA, and $.6 Capital) has been approved for the Project Prep Phase of the EMPower project.

The F'10 Project Budget will be managed via the Project Cost Plan and reported to the Steering Committee via the regular status reporting procedure. A budget will be developed during this phase to reflect detailed costs for the Analyze / Design phase and estimates for the remaining phases of the project.

8 Benefits Realization

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Inquiry of Expenditures related to the adoption of the SAP Platform Page 19 of 20

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The Benefits Realization Plan will be documented during this phase including both direct and indirect benefits realizations and documented quick business value hits.

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ID	Title	Change Type	Change Status	Dollars from/to Contingency	Record of Agreement - Date of Meeting	Modified	Record of Agreement - Attendance
1	Extend Release 2 Go Live from September 29 to December 8	Schedule	Approved	$ 886,000.00	2014-06-23	2014-09-25 14:03	Wong, David (dws);#17;#Lebeter, David;#20;#Stuckert, Don;#19;#Daschuk, Maureen;#21;#Anderson, Keith;#23;#Martell, Wayne;#22;#Baker, Bryan;#6;#Morison, Kip;#386;#Razlog, Davor;#314
2	Release 2 Scope Adjustments	Scope	Approved	$ -	2014-07-29	2014-09-25 14:03	Wong, David (dws);#17;#Lebeter, David;#20;#Daschuk, Maureen;#21;#Anderson, Keith;#23;#Martell, Wayne;#22;#Baker, Bryan;#6;#Morison, Kip;#386;#Stangl, Jorg;#376;#Mitha, Charlotte;#337
3	Tight schedule will impact solution quality and cause high backlog of enhancement requests and system defects.	Other	Rejected			2014-10-22 11:28	
4	Delay the two development items to 2015	Schedule	Rejected			2014-10-22 11:28	
5	Delay DWS Contractor Portal Implementation from Dec 8 to April 2015	Cost	Approved		2014-10-20	2014-11-03 8:13	Lebeter, David;#20;#Stuckert, Don;#19;#Poweska, Mark;#447;#Juby, Doug;#288;#Razlog, Davor;#314;#Baker, Bryan;#6;#Martell, Wayne;#22;#Morison, Kip;#386
6	DWS Project: Allocate contingency and extend stabilization for Contractor Portal	Cost	Approved	$ 145,000.00	2015-06-01	2015-09-10 8:34	Lebeter, David;#20;#Daschuk, Maureen;#21;#Mitha, Charlotte;#337;#Martell, Wayne;#22;#Razlog, Davor;#314;#Baker, Bryan;#6
7	DWS Project: Allocate $75k contingency for additional fixes	Cost	Approved	$ 75,000.00	2015-08-10	2015-09-10 8:35	Lebeter, David;#20;#Daschuk, Maureen;#21;#Mitha, Charlotte;#337;#Martell, Wayne;#22;#Razlog, Davor;#314;#Baker, Bryan;#6

CHANGE NOTICE - PROJECT LEVEL			
Title:	Extend Release 2 Go Live from September 29 to December 8		
Attachments:	*Upon completion of Change Notice please print and attach a signed copy to this form.*		
Project Phase:	Implementation	Funded By:	Contingency
Change Type:	Schedule	Change Driver: If "Other" chosen, specify your own value here:	Schedule Significant Risk
Change Status:	New		
Next Actions:	- Revise project schedule and project budget forecast - Project sponsors to sign-off this Change Request (Project Level Change Notice) - Identify scope reduction candidates to be considered by the Steering Committee with an objective to reduce delivery risks		
Description of Change (What):	On June 23, 2014 the steering committee agreed to a December 8th release date for the second release with stabilization support for the business rollout to the end of March 2015. The Steering Committee recognized that it is still a very tight schedule and considerable delivery risks associated with the new December 8 go-live date. Hence, the Steering Committee agreed to undertake the mitigation action to remove some of the non-core low priority scope items as a way to reduce the delivery risk. A separate Change Request has been created to document the scope adjustments that are agreed by the Steering Committee.		
Reason for Change (Why):	The original September go-live is not possible as it is largely driven by other anticipated go-live dates for other SAP projects other than the actual effort that is required to complete this project. The time available to deliver the technical go-live by the end of September has been substantially reduced due to following factors: - Long lead time to secure / procure project resources after the business case / EAR was approved at the end of March 2014 - Ramp-up time required to engage other Technology teams after the business case / EAR was approved at the end of March 2014 - Lead time to engage business subject matter experts after the business case/EAR approval on March 21 and the project kick-off on April 4 The mitigation actions that were undetaken by the project team were not successful: - Full core project team compliment was not achieved by May 16 because the new PM functional analyst fell sick after only spending 2 days on the projects and he is not expected to return. The start dates for the two BAs are delayed to June 2 and June 9 instead of mid-May. - While the project team has made good progress to resolve process decisions, but new process decisions have been uncovered. As a result, it is impossible for the project team to be able to recover from time loss and to deliver Release 2 by the original September 29 go-live date.		
Implementation of Change (How, Who):	- David Wong to work with Bryan Baker & Wayne Martell to revise the project schedule and budget forecast based on current approved scope - Project sponsors to sign-off this Change Request (Project Level Change Notice)		
Impact Assessment:	Technical go-live is delayed by 10 weeks (from September 29 to December 8, 2014) In order to achieve this extended schedule the contingency in the approved EAR will be utilized. Project cost forecast is still within the approved EAR.		
EAR Adjustment of Authorized Amount:	$0	EAR Adjustment of Expected Amount:	$0
Dollars from/to Reserve:	$0 *Positive to move $s from Reserve (e.g. 100.00). Negative to move $s to Reserve (e.g. -100.00).*	Dollars from/to Contingency:	$886,000 *Positive to move $s from Contingency (e.g. 100.00). Negative to move $s to Contingency (e.g. -100.00)*

Record of Agreement:	
Date of Meeting:	6/23/2014
Attendees:	Wong, David (dws); Lebeter, David; Stuckert, Don; Daschuk, Maureen; Anderson, Keith; Martell, Wayne; Baker, Bryan; Morison, Kip; Razlog, Davor

Signatures Required:

Project Initiator	WAYNE MARTELL JOHN KAPALKA	
	Signature	Date: Aug. 20, 2014
Project Sponsor	DAVID LEBETER	
	Signature	Date: Aug. 22, 2014
Project Manager	DAVID WONG	
	Signature	Date: Aug 20, 2014

CHANGE NOTICE - PROJECT LEVEL

Title:	Release 2 Scope Adjustments		
Attachments:	*Upon completion of Change Notice please print and attach a signed copy to this form.*		
Project Phase:	Implementation	Funded By:	N/A
Change Type:	Scope	Change Driver: If "Other" chosen, specify your own value here:	Schedule Significant Risk Business repriorization
Change Status:	New		
Next Actions:	- Revise project work plan based on the list of removed and added scope items - Project sponsors to sign-off this Change Request (Project Level Change Notice)		
Description of Change (What):	The purpose of this change request is to document the scope adjustment for Release 2. The scope adjustment is the result of the action item from the June 23 Steering Committee meeting to identify potential scope reduction candidates to mitigate delivery risks associated with the new December 8 go-live date. It is important to note that the project schedule and budget will not be revised as a result of this scope adjustment.		

Reason for Change (Why):

On June 23, 2014 the steering committee agreed to a December 8th release date for the second release with stabilization support for the business rollout to the end of March 2015. The Steering Committee recognized that it is still a very tight schedule and considerable delivery risks associated with the new December 8 go-live date. Hence, the Steering Committee agreed to undertake the mitigation action to remove some of the non-core low priority scope items as a way to reduce the delivery risk.

The project team identified and reviewed several scope reduction candidates including several out of scope items that were requested by the business users with the Steering Committee on July 29. The Steering Committee has agreed to remove several scope items from the Release 2 scope and rejected the removal of several other scope items that are proposed by the project team. The Steering Committee has also asked the project team to add several out-of-scope items to the Release 2 scope due to new business priority.

The table below provides the final list of scope items to be removed from the Release 2 scope and new scope items to be added to the Release 2 scope:

Steering Committee Decision	Business Unit	Potential Scope Reduction	Who is impacted	How they will be impacted (if not implemented)
Out of scope for Release 2. Candidate for stabilization rel.	Field Operations; Design	Lineroom comments sent to Passport.	Design Connect Coordinators	DCCs will need to relay lineroom comments to Designers.
In Scope for Release 2	Field Operations; PPD	MR Need Dates updated automatically when work order is re-scheduled	F.O. Planners, Schedulers, PPD DMCs or Contract Mgrs	Planners, etc. will need to communicate directly with Stores/MMBU to inform of change, or perform manual MR Need Date change in Passport.
Out of scope for Release 2 to provide specific capacity upload program. Workaround still required if PPD Work Delivery plan does *not* reflect crew capacity.	Field Operations	Ability to upload Field Ops planned capacity for work, by crew (distinct from overall work center capacity)	Technology sustainment	IT sustainment will need to upload Field Ops capacity manually (annually) [not required if PPD work delivery plan reflects Field capacity].
Project team to ensure FSA usability requirements are met.	Field Operations	Simplified [SAP] screen for FSAs to complete work orders	FSAs	FSAs will need to use Field Ops Scheduler's [SAP] screen.

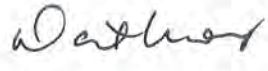
Services and Material estimates in scope. Phase and hot/cold out of scope for Release 2.	Field Operations	Send Passport work order information to SAP: (1) services, and material estimates, (2) Phase (e.g 3-phase, etc.), and (3) Hot/cold work indicator	F.O. Schedulers,	Schedulers will have less information to assist in scheduling. Variance reporting to remain in Passport Data Warehouse (not SAP).
Out of scope for Release 2. (please note that this item is not part of the original DWS scope)	PPD	PPD Contract Mgmt Processes[2]: ▪ Report to improve accruals process ▪ Contractor QA form ▪ Contractor database replacement	PPD Contract Managers	Contract Managers will need to maintain current processes.
High priority/severity defects and some agreed feature requests to be fixed/delivered during Release 1 stabilization. Recommendation to hand over proposed rel. 2 feature requests to sustainment.	PPD; Engineering and Design	Project Forecast Tool: Release 2 scope ▪ Forecasting resource hours ▪ Printing ▪ Usability improvements	PPD and D.Eng Project Managers and Project Techs	PPD & DE PMs etc. will need to work with Release 1 Project Forecast Tool. Recommend we re-prioritize remaining scope for future stabilization release.
In scope for Release 2.	PPD; Engineering and Design	Contractor Portal: contractors completing ESOs online (ESCC not required to re-key paper ESOs)	ESCs	ESCs continue to enter completed ESOs from PPD contractors. [related to ESOs on Service-Link]
In scope for Release 2. [separate project that must be supported by DWS] (please note that this item is not part of the original DWS scope)	Field Operations; Engineering and Design	ESOs on Service-Link[3]: PLTs completing ESOs in field (ESCC not required to re-key paper ESOs)	ESCs	ESCs continue to enter completed ESOs from internal PLTs. [related to Contractor Portal]
Out of scope for Release 2.	Field Operations; Engineering and Design	Related ESOs linked together	F.O. Schedulers	Schedulers will need to sort the list of ESOs to see related ESOs. (Design work orders' energization task will still be 'linked' to the related ESO)
In scope for Release 2. [scope split between SMI Rel 6, and DWS] (please note that this item is not part of the original DWS scope)	SMI[4]	SMI program managers allocate work to internal PLTs or contractors (and include required work order data)	F.O. Schedulers (and PLTs)	Schedulers and PLTs will not see DSMD orders in Scheduler view/screen. They will require manual dispatch.
In scope for Release 2. [separate project that must be supported by DWS] (please note that this item is not part of the original DWS scope)	Engineering and Design	Express Connect Web Enablement[5]: changes to support ESO information being available on web	ESCCs and Customers	ECWE Project delayed.

Implementation of Change (How, Who):	- David Wong to revise project work plan based on the list of removed and added scope items		
Impact Assessment:	The delivery risks associated with the new December 8 go-live date has not been mitigated as the new and out-of-scope items that are added to the Release 2 scope have negated the positive impact resulted from the removal of several minor scope items. The new scope items require additional functional specifications and development work. They also caused rework to the functional specifications that were completed previously. It is important to note that the project schedule and budget will not be revised as a result of the scope adjustment.		
EAR Adjustment of Authorized Amount:	$0	EAR Adjustment of Expected Amount:	$0
Dollars from/to Reserve:	$0 *Positive to move $s from Reserve (e.g. 100.00). Negative to move $s to Reserve (e.g. -100.00).*	Dollars from/to Contingency:	$0 *Positive to move $s from Contingency (e.g. 100.00). Negative to move $s to Contingency (e.g. -100.00)*

Record of Agreement:

Date of Meeting:	7/29/2014
Attendees:	Wong, David (dws); Lebeter, David; Daschuk, Maureen; Anderson, Keith; Martell, Wayne; Baker, Bryan; Morison, Kip; Stangl, Jorg; Mitha, Charlotte

Signatures Required:

Project Initiator	WAYNE MARTELL JOHN KAPALKA	
Signature		Date Aug. 20, 2014
Project Sponsor	DAVID LEBETER	
Signature		Date Aug. 22, 2014
Project Manager	DAVID WONG	
Signature		Date Aug 20, 2014

CHANGE NOTICE - PROJECT LEVEL

Title:	Delay DWS Contractor Portal Implementation from Dec 8 to April 2015		
Attachments:	• DWS Steering Committee Review - 2014-10-20.pptx *Upon completion of Change Notice please print and attach a signed copy to this form.*		
Project Phase:	Implementation	Funded By:	EAR Revision
Change Type:	Cost	Change Driver: If "Other" chosen, specify your own value here:	Other Significantly higher development effort and t...
Change Status:	New		
Next Actions:	Complete and approve EAR Memo and EAR revision documentation		
Description of Change (What):	Delay DWS Contractor Portal Implementation from Dec 8, 2014 to April 2015		
Reason for Change (Why):	Not feasible to implement for Dec 8 Go Live due to high development effort and technical resource capacity constraint.		
Implementation of Change (How, Who):	At the Oct 20, 2014 Steering Committee meeting, the Steering Committee supported the recommendation to obtain EAR revision with respect to the delay implementation of the DWS Contractor Portal from Dec 8 to April 2015. The key changes are highlighted below: - Technical design and development for the DWS Contractor Portal will start in the latter part of October with plan for business rollout in April 2014. - SCS Workspace (SharePoint) to be deployed to contractors in December mainly for document exchange. - The project will be extended from March 31, 2015 to May 31, 2015 to provide resources to support the business rollout to the contractors and post rollout stabilization period.		
Impact Assessment:	Cost impact of $700,000. Extend project from March 31, 2015 to May 31, 2015.		
EAR Adjustment of Authorized Amount:	$700,000	EAR Adjustment of Expected Amount:	$700,000
Dollars from/to Reserve:	*Positive to move $s from Reserve (e.g. 100.00). Negative to move $s to Reserve (e.g. -100.00).*	Dollars from/to Contingency:	*Positive to move $s from Contingency (e.g. 100.00). Negative to move $s to Contingency (e.g. -100.00)*

Record of Agreement:

Date of Meeting:	10/20/2014
Attendees:	Lebeter, David; Stuckert, Don; Poweska, Mark; Juby, Doug; Razlog, Davor; Baker, Bryan; Martell, Wayne; Morison, Kip

Signatures Required:

Project Initiator	Wayne Martell	October 31, 2014	
	Signature	Date	
Project Sponsor		Oct. 31, 2014	
	Signature	Date	
Project Manager		Oct 30, 2014	
	Signature	Date	

CHANGE NOTICE - PROJECT LEVEL

Title:	DWS Project: Allocate contingency and extend stabilization for Contractor Portal		
Attachments:	*Upon completion of Change Notice please print and attach a signed copy to this form.*		
Project Phase:	Implementation	Funded By:	Contingency
Change Type:	Cost	Change Driver: If "Other" chosen, specify your own value here:	Other extension of stabilization
Change Status:	New		
Next Actions:	1. revise project schedule and forecast to reflect longer duration for stabilization 2. advise project resources of extension 3. obtain sign off of this change notice		
Description of Change (What):	DWS Contractor Portal is scheduled for go-live in June 2015. It was recommended to the DWS Project steering committee to allocate some contingency funds to extend the project schedule to ensure successful stabilization of the Contractor Portal release. The Steering Committee agreed to allocate a portion of the $255,000 contingency such that $110,000 contingency remains unallocated.		
Reason for Change (Why):	Due to the number of stakeholders, particularly external line contractors, who require training and post go-live support, and in order to ensure timely response to issues that may arise in the production environment, an extended stabilization period was requested.		
Implementation of Change (How, Who):	Project Manager (Bryan Baker) and team will implement this change.		
Impact Assessment:	The project will extend key resources into August 2015. Impact to internal and external stakeholders is positive. In particular, user training will be run through July allowing gradual onboarding of contractors.		
EAR Adjustment of Authorized Amount:	$0	EAR Adjustment of Expected Amount:	$0
Dollars from/to Reserve:	$0 *Positive to move $s from Reserve (e.g. 100.00). Negative to move $s to Reserve (e.g. -100.00).*	Dollars from/to Contingency:	$145,000 *Positive to move $s from Contingency (e.g. 100.00). Negative to move $s to Contingency (e.g. -100.00)*

Record of Agreement:

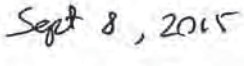
Date of Meeting:	**6/1/2015**
Attendees:	**Lebeter, David; Daschuk, Maureen; Mitha, Charlotte; Martell, Wayne; Razlog, Davor; Baker, Bryan**

Signatures Required:

Project Initiator Wayne Martell

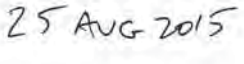
Signature Date

Project Sponsor David Lebeter



Signature Date

Project Manager Bryan Baker



Signature Date

CHANGE NOTICE - PROJECT LEVEL

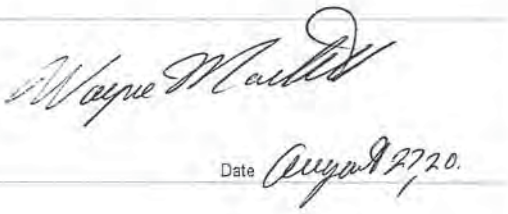
Title:	DWS Project: Allocate $75k contingency for additional fixes		
Attachments:	*Upon completion of Change Notice please print and attach a signed copy to this form.*		
Project Phase:	Implementation	Funded By:	Contingency
Change Type:	Cost	Change Driver: If "Other" chosen, specify your own value here:	Work Reprioritisation
Change Status:	New		
Next Actions:	1. Revise project forecast 2. Advise project resources of additional tasks 3. Obtain sign off of this change notice		
Description of Change (What):	Changes will include 1. Small, common or emergent fixes including "service orders chargeable in Passport" 2. Change mgmt support for sustainment transition 3. Analysis of performance improvements that could be made for HQ Schedulers and/or regional planners (WM094/WM103)		
Reason for Change (Why):	These changes will improve the stakeholder experience in using the solution.		
Implementation of Change (How, Who):	Project Manager (Bryan Baker) and team will implement this change.		
Impact Assessment:	The project will extend key resources into September 2015. Impact to internal and external stakeholders is positive.		
EAR Adjustment of Authorized Amount:	$0	EAR Adjustment of Expected Amount:	$0
Dollars from/to Reserve:	$0 *Positive to move $s from Reserve (e.g. 100.00). Negative to move $s to Reserve (e.g. -100.00).*	Dollars from/to Contingency:	$75,000 *Positive to move $s from Contingency (e.g. 100.00). Negative to move $s to Contingency (e.g. -100.00)*

Record of Agreement:

Date of Meeting:	8/10/2015
Attendees:	Lebeter, David; Daschuk, Maureen; Mitha, Charlotte; Martell, Wayne; Razlog, Davor; Baker, Bryan

Signatures Required:

Project Initiator Wayne Martell

Signature Date 

Project Sponsor David Lebeter

Signature Sept 8, 2015 Date

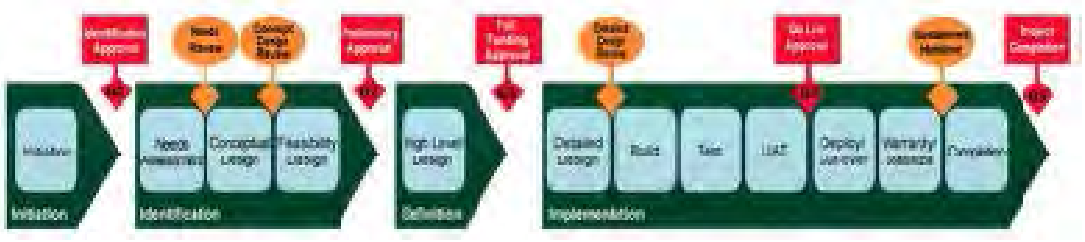
Project Manager Bryan Baker

Signature 25 AUG 2015 Date

18.0 C. BC HYDRO APPROVAL AND OVERSIGHT CONTROLS AND PROCESSES

Reference: PROJECT MANAGEMENT GUIDELINES FOR TECHNOLOGY PROJECTS
Exhibit B-3, Attachment 18, p. 23
Relationship with submitting business cases / EARs for approval

BC Hydro provides the following diagram on page 23 of Attachment 18 to the Consolidated Information Filing:



BC Hydro further provides the following information on page 23 of Attachment 18 regarding ITDSP:

The appropriate ITDSP Gates must be passed before submitting a Statement of Objectives / EAR or Business Case / EAR, for approval:

- Gate 1 Identification Approval must be passed before submitting an Identification Phase Statement of Objectives / EAR for approval. Please note that Gate 1 is handled through the Project Release Process
- Gate 2 Preliminary Approval must be passed before submitting a Definition Phase Business Case / EAR for approval
- Gate 3 Full Funding Approval must be passed before submitting an Implementation Business Case / EAR for approval.

1.18.2 Did BC Hydro identify/explore alternative technology solutions for any/all of the following projects prior to proceeding with the SAP solution? (i) PPM; (ii) PSW; (iii) EMPower; (iv) DWS

RESPONSE:

(i) Yes.

(ii) No.

(iii) Yes.

(iv) No.

18.0 C. BC HYDRO APPROVAL AND OVERSIGHT CONTROLS AND PROCESSES

Reference: PROJECT MANAGEMENT GUIDELINES FOR TECHNOLOGY PROJECTS
Exhibit B-3, Attachment 18, p. 23
Relationship with submitting business cases / EARs for approval

BC Hydro provides the following diagram on page 23 of Attachment 18 to the Consolidated Information Filing:

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1.18.2 Did BC Hydro identify/explore alternative technology solutions for any/all of the following projects prior to proceeding with the SAP solution? (i) PPM; (ii) PSW; (iii) EMPower; (iv) DWS

1.18.2.1 If yes, please explain if the alternative technology solutions were analyzed using the same criteria analyzed for the SAP option.

RESPONSE:

PPM – For the PPM project the high level business requirements broke down to three major areas requiring technical solutions. The alternative analysis was made on a case-by-case basis in each of these areas, and then analyzed as a 'whole solution' alternative. The results of the structured decision making process are documented in the PPM project business case (please refer to Attachment 124 to BC Hydro's response to Mr. Dix IR 1.16.0):

- **For schedule management BC Hydro compared SAP's project scheduling capability to other software which could meet the scheduling requirements and integrate with SAP. Oracle Primavera software was chosen over SAP for scheduling due to ease of use and functionality to meet BC Hydro requirements.**

- **For cost management it was assumed that actual project costs would be maintained in a SAP corporate financial system. However, as schedules would be in Primavera, it was decided that project forecasts would be generated from Primavera as they needed to be driven from the project schedule. SAP was chosen for actual cost management and reporting, and Primavera was chosen for cost forecasting.**

- **For scope management it was determined that SAP would need to be the source of project work breakdown structures (WBS) representing project scope. This was due, in part, to technical considerations regarding the interface between Primavera and SAP. SAP was chosen for scope management as it relates to WBS.**

In summary, the alternative technical solutions for the different components of the PPM solution were each analyzed with different criteria due to constraints and requirements.

EMPower – The EMPower implementation phase business case identifies one alternative to implementing human resources functionality in SAP; that is, continuing to use the existing PeopleSoft Human Resources system. However, this alternative was deemed not viable because the PeopleSoft HR system was not going to be supported by the vendor in the coming years.

The EMPower project assessed business requirements against an SAP solution and, finding sufficient fit, proceeded without identifying any other alternative technology solutions, other than the existing system. The EMPower project did not analyze the option of upgrading PeopleSoft HR.

18.0 C. BC HYDRO APPROVAL AND OVERSIGHT CONTROLS AND PROCESSES

Reference: PROJECT MANAGEMENT GUIDELINES FOR TECHNOLOGY PROJECTS
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1.18.2 Did BC Hydro identify/explore alternative technology solutions for any/all of the following projects prior to proceeding with the SAP solution? (i) PPM; (ii) PSW; (iii) EMPower; (iv) DWS

1.18.2.2 If no, please explain why not.

RESPONSE:

<u>PSW</u> – In keeping with the SAP strategy, the PSW project proceeded on the assumption that SAP would be used as the default solution. It was determined

that a sufficient proportion of business requirements could be met by SAP. In addition, in order to create a single source of truth for business information, it was determined that SAP would be used. As such, alternative technology solutions were not identified.

<u>DWS</u> – The DWS project proceeded directly into implementation phase based on the definition (blueprint) phase work performed under the Work Management Foundational Technology and Schedule Dispatch & Mobility projects. The blueprint from the prior projects assumed an SAP-based solution, and therefore the DWS project did not identify alternative technical solutions.

18.0 C. BC HYDRO APPROVAL AND OVERSIGHT CONTROLS AND PROCESSES

Reference: PROJECT MANAGEMENT GUIDELINES FOR TECHNOLOGY PROJECTS
Exhibit B-3, Attachment 18, p. 23
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- Gate 3 Full Funding Approval must be passed before submitting an Implementation Business Case / EAR for approval.

1.18.3 Please provide a chronological summary of relevant EARs prepared in conjunction with the following projects/programs in conformance to the ITDSP Gates up to and including the Warranty Period highlighting: (a) the original amounts, (b) the change in amounts, (c) the justification for the change, and (d) whether it was approved, denied, pending approval or cancelled:

i. Enterprise Financials Upgrade;
ii. PSW;
iii. PPM;
iv. EMPower; and
v. DWS

RESPONSE:

Please see table below for the chronological summary.

Notes:

1. **All noted EARs were approved.**
2. **The noted EARs cover the life of the respective projects.**
3. **All changes in EAR revision amounts are additions, unless noted otherwise.**
4. **Amounts reflect the total authorized cost of the original and additional request, including capital and OMA.**
5. **Justifications note the project phase names as defined by the respective projects.**

Project	Date	EAR Revision	Original ($ million)	Addition ($ million)	Justification
i. Enterprise Financials Upgrade/ Financial System Replacement project	August 2008	Rev. 0	0	0.8	Blueprint (Definition) phase
	February 2009	Rev. 1	0.8	4.6	Definition (Definition) phase
	July 2009	Rev. 2	5.4	13.3	Implementation phase
	November 2010	Rev. 3	18.7	1.2	Project scope changes
ii. PSW	March 2011	Rev. 0	0	4.5	Design (Definition) phase
	December 2011	Rev. 1	4.5	2.8	Extension of design (Definition) phase
	November 2012	Rev. 2	7.3	3.2	Extension of design phase

Project	Date	EAR Revision	Original ($ million)	Addition ($ million)	Justification
iii. PPM	**September 2008**	**Rev. 0**	**0**	**0.2**	**Identification phase I**
	March 2009	**Rev. 1**	**0.2**	**6.0**	**Identification & Definition phase II**
	November 2009	**Rev. 2**	**6.2**	**-0.2**	**Extension of phase II and release of $1.8 million Reserve.** **Removed Capital Overhead budget as it was not applicable, thus the reduction in authorized amount**
	December 2009	**Rev. 3**	**6.0**	**12.8**	**Implementation phase** **$12.8 million represents request for $13 million less $0.2 million of unreleased reserve from Definition phase.**
	May 2011	**Rev. 4**	**18.8**	**8.1**	**Extension of Implementation phase, extended stabilization, and scope changes**
iv. EMPower	**June 2009**	**Rev. 0**	**0**	**0.1**	**Blueprint (Definition) phase**
	June 2010	**Rev. 1**	**0.1**	**0.5**	**Planning phase**
	June 2010	**Rev. 2**	**0.6**	**4.0**	**Design (Definition) phase**
	October 2011	**Rev. 3**	**4.6**	**14.0**	**Implementation phase**

Project	Date	EAR Revision	Original ($ million)	Addition ($ million)	Justification
v. DWS	**March 2014**	**Rev. 0**	**0**	**9.5**	**Implementation phase**
	January 2015	**Rev. 1**	**9.5**	**1.0**	**Extended schedule and stabilization**
	April 2015	**Rev. 2**	**10.5**	**1.9**	**Extended schedule**

18.0 C. BC HYDRO APPROVAL AND OVERSIGHT CONTROLS AND PROCESSES

Reference: PROJECT MANAGEMENT GUIDELINES FOR TECHNOLOGY PROJECTS
Exhibit B-3, Attachment 18, p. 23
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- Gate 3 Full Funding Approval must be passed before submitting an Implementation Business Case / EAR for approval.

1.18.3 Please provide a chronological summary of relevant EARs prepared in conjunction with the following projects/programs in conformance to the ITDSP Gates up to and including the Warranty Period highlighting: (a) the original amounts, (b) the change in amounts, (c) the justification for the change, and (d) whether it was approved, denied, pending approval or cancelled:

1.18.3.1 For each EAR identified, please ensure the following information is included: (i) the original amounts, (ii) the change in amounts, (iii) the justification for the change, and (iv) whether the request was approved, denied or cancelled.

RESPONSE:

Please refer to BC Hydro's response to BCUC IR 1.18.3.

19.0 C. BC HYDRO APPROVAL AND OVERSIGHT CONTROLS AND PROCESSES

Reference: AUTHORIZATION AND GOVERNANCE
Exhibit B-3, Section 4.2.3, pp. 35-36
Project completion and evaluation reporting (PCER)

1.19.1 In what scenarios under BC Hydro's current governance and oversight policies would a PCER be optional? Please explain.

RESPONSE:

As per BC Hydro's MAPP 4.1.1B.2 policy, at Attachment 17 of the Consolidated Information Filing, a PCER is optional for projects under $20 million. However, since 2013 the practice within Technology has been more stringent in requiring a PCER for all IT&T projects and work programs before they are closed.

19.0 C. BC HYDRO APPROVAL AND OVERSIGHT CONTROLS AND PROCESSES

Reference: AUTHORIZATION AND GOVERNANCE
Exhibit B-3, Section 4.2.3, pp. 35-36
Project completion and evaluation reporting (PCER)

1.19.2 In instances when a PCER was not created, what alternative forms were used to track acceptance that a project met the business needs?

RESPONSE:

The PCER does not evaluate acceptance of the technology solution delivered by a project. That objective is met through User Acceptance Testing (UAT).

UAT is the main mechanism to track acceptance of the technology solution delivered by a project. UAT is facilitated by the project and executed by business users. UAT verifies that a technology solution meets business needs as specified in the project's business requirements and business case. UAT needs to be completed before technology solutions go live and are put in service. Any identified deficiencies are logged as defects and resolved by the project team and business users before go-live or later.

UAT outcomes are presented to the project's Steering Committee, or Project Initiator or representative business users if the project does not have a Steering Committee, as part of an operational readiness assessment. Gate reviews verify that UAT is completed prior to go-live.

19.0 C. BC HYDRO APPROVAL AND OVERSIGHT CONTROLS AND PROCESSES

Reference: AUTHORIZATION AND GOVERNANCE
Exhibit B-3, Section 4.2.3, pp. 35-36
Project completion and evaluation reporting (PCER)

1.19.2 In instances when a PCER was not created, what alternative forms were used to track acceptance that a project met the business needs?

1.19.2.1 Are metrics used? If so, what are they, how are they used and by whom? Who is accountable for the accuracy of the metrics? Who are the consumers of these metrics?

RESPONSE:

The PCER does not evaluate acceptance of the technology solution delivered by a project. That objective is met through User Acceptance Testing (UAT).

As part of the UAT at the go-live and sustainment handover decision points, various metrics are used to guide the project team, business users and Steering Committee in deciding if the project is ready to go-live or ready to complete handover to sustainment. For example, the number of defects still open, and how many of them have critical or high severity impact on business functionality will drive a readiness assessment of green, yellow or red.

19.0 C. BC HYDRO APPROVAL AND OVERSIGHT CONTROLS AND PROCESSES

Reference: AUTHORIZATION AND GOVERNANCE
Exhibit B-3, Section 4.2.3, pp. 35-36
Project completion and evaluation reporting (PCER)

1.19.3 Please provide the PCERs for the following projects:

i. Enterprise Financials Upgrade;
ii. PSW;
iii. PPM;
iv. EMPower; and
v. DWS

RESPONSE:

Please refer to the following attachments to Mr. Dix's IR 1.16.0:

i. Financial Systems Replacement: PCER was not drafted

ii. PSW: Attachment 162

iii. PPM: Attachment 126

iv. EMPower: PCER was not drafted

v. DWS: Attachment 166

19.0 C. BC HYDRO APPROVAL AND OVERSIGHT CONTROLS AND PROCESSES

Reference: AUTHORIZATION AND GOVERNANCE
Exhibit B-3, Section 4.2.3, pp. 35-36
Project completion and evaluation reporting (PCER)

1.19.3 Please provide the PCERs for the following projects:

- Enterprise Financials Upgrade;
- PSW;
- PPM;
- EMPower; and
- DWS

1.19.3.1 If a PCER does not exist for any of these projects, please explain why and how the lack of a PCER would likely have impacted the assessment of the project.

RESPONSE:

PCERs do not exist for the Financial Systems Replacement and EMPower projects. BC Hydro is not able to determine the reason why these PCERs were not drafted. The lack of PCERs for these projects may have reduced some visibility to the scope and benefits achieved and the lessons learned through project delivery; however, these projects delivered successful outcomes.

19.0 C. BC HYDRO APPROVAL AND OVERSIGHT CONTROLS AND PROCESSES

Reference: AUTHORIZATION AND GOVERNANCE
Exhibit B-3, Section 4.2.3, pp. 35-36
Project completion and evaluation reporting (PCER)

1.19.3 Please provide the PCERs for the following projects:

- Enterprise Financials Upgrade;
- PSW;
- PPM;
- EMPower; and
- DWS

1.19.3.2 If an alternative report/assessment was prepared in lieu of a PCER, please provide this document.

RESPONSE:

As noted in BC Hydro's response to BCUC IR 1.19.3.1, PCERs do not exist for the Financial Systems Replacement and EMPower projects. There were no alternative reports or assessments prepared in lieu of a PCER for these projects.

19.0 C. BC HYDRO APPROVAL AND OVERSIGHT CONTROLS AND PROCESSES

Reference: AUTHORIZATION AND GOVERNANCE
Exhibit B-3, Section 4.2.3, pp. 35-36
Project completion and evaluation reporting (PCER)

1.19.4 What forms of reporting exist during the life cycle of a project? Who sees these reports? What measures are used to track the progress of a project? What actions are taken based on the tracked measures (e.g., when a project is at risk of over-spending or of not achieving a business objective)?

RESPONSE:

Please refer to BC Hydro's response to BCUC IRs 1.21.1 and 1.21.2 with respect to reporting during the life cycle of a project, who sees these reports, and what measures are tracked.

As noted in the response to BCUC IR 1.21.2 the Technology PMO reviews all IT project status reports to see which indicators (measures) are off track based on colour coding of red or yellow. Project managers are contacted by PMO advisors for follow up as required.

An overspend report is prepared monthly by the Finance group flagging projects that are close to their authorized amounts and those that are at risk of an overspend.

When an overspend is reported to the PMO, the project team is directed to resolve the issue. Follow up actions vary. If a project is at risk of over-spending, the approval of an EAR revision may be expedited if one is in progress already, or a project team may be advised to stand-down resources until funds are approved.

If a project is at risk of not achieving a business objective, this will typically be indicated as a scope, business process, or general risk/issue on the project status report. Actions may include steering committee meetings to decide on scope, schedule, and/or cost changes for the project in order to achieve objectives.

20.0 C. BC HYDRO APPROVAL AND OVERSIGHT CONTROLS AND PROCESSES

Reference: PROJECT DELIVERY GOVERNANCE
Exhibit B-3, Section 4.3, pp. 36-37
IT&T project roles

BC Hydro states on pages 36 and 37 of its Consolidated Information Filing:

The Project Manager has primary responsibility for the project... The Project Manager is the person with appropriate qualifications who is assigned the responsibility of leading the project team to complete the objectives of the project. The Project Manager is the person with the single point of accountability for the project.

1.20.1 Are professional services or contracted staff engaged as project managers at BC Hydro for IT projects? If so, what oversight and control mechanisms are in place to oversee professional services and contract staff acting as project managers?

RESPONSE:

Professional services and contracted staff are engaged as project managers for IT projects at BC Hydro.

Professional services and contracted staff in IT project management roles have the same responsibilities and are subject to the same oversight as employee IT project managers in accordance with ITDSP and the Project Management Guidelines for Technology Projects (Refer to Attachments 19 and 18 of the Consolidated Information Filing, respectively). Contractors have no financial responsibilities or authority.

Specific additional controls over external project managers include:

- **A written contract, statement of work, project request/order with the service provider or contracting agency;**
- **A BC Hydro employee is accountable for the contract and oversight of external resource; and**
- **A Contractor Time Sheet system, with external project managers time reviewed and approved by BC Hydro employees.**

20.0 C. BC HYDRO APPROVAL AND OVERSIGHT CONTROLS AND PROCESSES

Reference: PROJECT DELIVERY GOVERNANCE
Exhibit B-3, Section 4.3, pp. 36-37
IT&T project roles

BC Hydro states on pages 36 and 37 of its Consolidated Information Filing:

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1.20.1 Are professional services or contracted staff engaged as project managers at BC Hydro for IT projects? If so, what oversight and control mechanisms are in place to oversee professional services and contract staff acting as project managers?

1.20.1.1 Do professional services and contract project managers have the same authorities, responsibilities and accountabilities as the ones prescribed for BC Hydro internal employees in the Project Management Guidelines for Technology Projects (6D.105)? Please explain.

RESPONSE:

The expectations, accountabilities and responsibilities for internal and external project managers are the same except for differences regarding financial and commitments approvals and access to information:

- **External project managers cannot approve financial and commitment documents such as approving invoices for payments, or approving/cancelling contracts. In such situations approvals are provided by BC Hydro employees who are responsible for engagements with external Project Managers or oversee external Project Managers on specific engagement. In such situations the external project manager provides necessary information and justification to BC Hydro employees, and it is ultimately the BC Hydro employees deciding to provide approval.**

- **External project managers may not have access to all internal systems as BC Hydro employee project managers. In such cases, BC Hydro employees provide report extracts so that external project managers can complete their responsibilities.**

External project managers are subject to the same control mechanism as employee project managers as defined by the ITDSP.

21.0 C. BC HYDRO APPROVAL AND OVERSIGHT CONTROLS AND PROCESSES

Reference: PROJECT MANAGEMENT GUIDELINES FOR TECHNOLOGY PROJECTS
Exhibit B-3, Attachment 18, pp. 14-15
Project manager responsibilities

The following is a list of some of the key responsibilities identified for the project manager on page 15 of Attachment 18 of the Consolidated Information Filing:

- Detail and manage the scope, schedule, cost, quality and associated risks of the work to achieve the project objectives approved by the Project Initiator.
- Develop all project plans and manage the overall project delivery, and achievement of targeted project performance metrics. Accountable for acceptable completion of the project plan tasks on time, in scope, schedule and cost changes.
- Maintain an auditable record of scope, schedule and cost changes.
- Maintain an auditable record or project deliverables including approval records as appropriate.
- Track scope against requirements.

1.21.1 What controls and measures are used to manage and track scope, schedule, cost, quality and associated risk? Please elaborate.

RESPONSE:

Project oversight and controls are discussed in section 4 of the Consolidated Information Filing and detailed in the project management guidelines and ITDSP and tailoring guidelines at Attachments 18 and 19 of the Consolidated Information Filing. The following is a summary.

<u>Scope, Schedule and Cost:</u>

Project Managers are accountable to lead the project team to complete the objectives of the project, as stated in the approved Business Case for the respective project phase. As such, Project Managers have the responsibility to manage the project scope, schedule and budget to the approved Business Case. As stated in section 2.4 of Attachment 18 of the Consolidated Information Filing, the Project Managers are responsible to report significant changes to the Project Initiator and Project Sponsor, formally advise the Project Initiator and seek his/her direction if the project schedule or objectives (scope, cost) cannot be maintained through modifications of work sequence or approved resources. The Project

Managers are further accountable to obtain formal approval of the scope, schedule or cost change.

Depending on the circumstance, the Project Manager will need to obtain approval on a Project Level Change Notice (PLCN) or will need to initiate a Business Case/EAR revision:

PLCN

- **A PLCN must be used in the following circumstances:**
    - **For changes that impact the project scope but do not impact the overall business benefits as stated in the approved Business Case;**
    - **For changes that materially impact the project schedule (typically a delay to the schedule set in the approved Business Case on milestones such as the completion of the approved phase, or a change of the approved In Service Date;**
    - **For any work that would require use of contingency funds set out in the Business Case/EAR as Project Contingency.**
- **The PLCN must be reviewed with the Technology PMO advisor and must be approved by the Project Initiator. The Project Initiator may ask that the Project Sponsor signs the PLCN as well. A signed copy of the PLCN must be uploaded to the relevant change item in the project's HydroShare site as a Change Log. PLCNs are also discussed at Steering Committee meetings, for projects that have Steering Committees.**

Business Case/EAR revision

- **A Business Case/EAR revision must be used in the following circumstances:**
    - **For changes that impact the overall business benefits as stated in the approved Business Case (adding or removing scope items that materially impact the approved Business Case);**
    - **For changes that impact the budget stated in the approved Business Case / EAR.**
- **The approval process followed for the original Business Case/EAR applies to the Business Case/EAR revisions, including submitting if for approval to the original Business Case/EAR approvers and potentially more reviewers, if the original FAAP thresholds are exceeded.**

Quality:

The ITDSP framework and Project Management Guidelines address various aspects of quality: quality of the project deliverables, quality of the schedules and quality of the estimates. All projects are mandated to prepare testing strategies and plans appropriate to their level of complexity. Processes are in place to trace the project scope and requirements through to design, build, and test. Testing includes user acceptance testing prior to the project solution being implemented to confirm that the quality of the solution meets the business expectations.

Complex projects may have Quality Assurance Leads assigned and accountable to:

- **Develop the project Quality Management Plan and manage its execution;**
- **Coordinate any external resources defined in the Quality Management Plan;**
- **Work with the Project Manager to ensure the overall project methodology contains appropriate quality assurance deliverables and activities;**
- **Report periodically to the Steering Committee on the execution of the project against the Quality Management Plan;**
- **Make recommendations to the Steering Committee with regard to changes to the project governance structure.**

The PMO chairs project gate reviews, conducts annual quality reviews of projects and assesses the performance of Project Managers.

The annual quality review follows established criteria and scoring mechanism to assess compliance with ITDSP. An action plan to address the findings of the annual quality review is established and delivered.

The performance of Project Managers is assessed annually with clear criteria and scoring guidelines.

Risk:

All projects are required to create and maintain a risk register. The purpose of the risk register is to help the project team understand the key risks to project success and agree to the risk treatment plans developed to address identified risks. The Project Managers are accountable to maintain the risk register, report on project risks, and ensure risk treatment plans are implemented on a timely basis. The standardized monthly status reports require Project Managers to report on the top three to five risks and issues specific to the project, including a

summary description of the risk treatment and issue resolution in place for each risk and issue. The review of project risks is a standing agenda item for project Steering Committee meetings. If the project does not have a Steering Committee, the Project Manager reviews risks regularly with the Project Initiator and the Project Sponsor.

In addition to the above, the Project Manager prepares monthly status reports and an assessment of the project against key project metrics and health indicators, as described in section 4.2 of the Project Management Guidelines for Technology Projects, at Attachment 18 of the Consolidated Information Filing.

Gate reviews are mandatory at the end of each of the four delivery phases. They are the ultimate control point as all aspects of scope, schedule, quality and risk are reviewed at the gate. The review results in a Go/No Go decision that is required prior to proceeding to the next phase. A standard set of requirements is verified at each gate to demonstrate that projects are ready for the next phase.

21.0 C. BC HYDRO APPROVAL AND OVERSIGHT CONTROLS AND PROCESSES

Reference: PROJECT MANAGEMENT GUIDELINES FOR TECHNOLOGY PROJECTS
Exhibit B-3, Attachment 18, pp. 14-15
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- Develop all project plans and manage the overall project delivery, and achievement of targeted project performance metrics. Accountable for acceptable completion of the project plan tasks on time, in scope, schedule and cost changes.
- Maintain an auditable record of scope, schedule and cost changes.
- Maintain an auditable record or project deliverables including approval records as appropriate.
- Track scope against requirements.

1.21.2 How frequently are controls and measures tracked and reported on? Who consumes these reports? What thresholds are in place for triggering actions/escalation? Please elaborate.

RESPONSE:

These items are discussed in the project management guidelines and ITDSP and tailoring guidelines at Attachments 18 and 19 of the Consolidated Information Filing. The following is a summary.

<u>How frequently</u>

Monthly standardized status reports are mandatory. The Technology PMO monthly status reports utilize a "green", "yellow", "red" traffic light indicator methodology to report the health of key project performance indicators as well as the overall health of the project in its entirety. The key project performance indicators include: cost/budget, schedule, scope, resources, risk management, dependencies, architecture, change management, business process, and overall satisfaction with the project. This does not preclude other project-specific status update reports that are needed for, and add value to, the management of projects (e.g., status reports provided in regular meetings with the Project Initiator, Steering Committee status reports).

BC Hydro uses Primavera P6 for scheduling and standardized schedules are created and maintained for all projects. Updating and progressing of the schedules is mandatory at least monthly and recommended to be done more frequently. Primavera P6 provides a centralized view of schedules for active projects.

A Technology Consolidated Capital Report is produced monthly by Finance and reviewed by the Technology PMO. This report provides updated monthly financial information of all active and completed projects in the fiscal year as well as a consolidated portfolio financial view.

Who consumes the reports

The monthly status reports are intended to meet the Project Manager's regular reporting obligations to all project stakeholders. This includes the Technology PMO, Project Sponsor, Project Initiator, Steering Committee, and any other concerned party within BC Hydro.

Monthly Primavera P6 schedule reports are analyzed by the Technology PMO.

The Monthly Technology Consolidated Capital Report is analyzed by Finance and the Technology PMO. The consolidated portfolio financial view is reviewed with the Technology Leadership Team as part of the overall Technology financials monthly review.

Thresholds for triggering actions/escalation

Monthly project status reporting is one of BC Hydro's mechanisms for control and oversight of our large portfolio of work. Information contained in project status reports is used as input into other key BC Hydro reporting requirements (e.g., the Technology Monthly Executive Report). The traffic light indicator methodology is used to assist with triggering actions/escalations as needed:

- **Projects reporting green status overall are on track, with no significant issues;**
- **Projects reporting yellow status have identified issues that require resolution or mitigation due to potential impact to scope, cost, schedule or quality;**
- **Projects reporting red status are off track and experiencing issues that require immediate resolution due to high impact on cost and schedule.**

In addition to the project specific stakeholders, the Technology PMO reviews all status reports. All projects reporting red status are included the Technology Monthly Executive Report. Projects reporting yellow status may also be included

in that report, as agreed to with the Technology Leadership Team and the Technology PMO. Action on risks and issues raised through the status reports is taken on a case by case basis, as appropriate for each project.

Monthly Primavera P6 schedule reports identify projects with significant variances compared to baselines. Follow up and corrective action is initiated with individual Project Managers as appropriate.

Based on the review of the Monthly Technology Consolidated Capital Report, corrective actions are initiated with specific projects (for example if they are forecasting overspend or if they are in overspend state) or on portfolio level if we observe that active projects would require more or less funding leading in slowing down or accelerating project release.

21.0 C. BC HYDRO APPROVAL AND OVERSIGHT CONTROLS AND PROCESSES

Reference: PROJECT MANAGEMENT GUIDELINES FOR TECHNOLOGY PROJECTS
Exhibit B-3, Attachment 18, pp. 14-15
Project manager responsibilities

The following additional key responsibilities are listed for the project manager on page 15 of Attachment 18:

- Report significant changes to the Project Initiator and Project Sponsor. Formally advise the Project Initiator and seek his/her direction if the project schedule or objectives cannot be maintained through modification of work sequence or approved resources.
- Proactively raise issues of significant concern to Project Initiator and/or Steering Committee so that they have the opportunity to provide their assessment and input for resolving the matter.
- Ensure coordination and integration of project deliverables and timelines with related initiatives identified in the Business Case, Statement of Objectives and/or Project Charter or otherwise, as directed by the Steering Committee.
- Ensure escalation and coordination of issues to support timely resolution.
- Maintain an issue log, report on project risks, and ensure risk treatment plans developed for project risks and implemented on a timely basis.

1.21.3 Have these project manager responsibilities changed since 2008? Please elaborate.

RESPONSE:

In addition to the responsibilities listed above, project managers now have the responsibility to:

- **Provide monthly standardized status reports to the Technology PMO;**
- **Use the P6 scheduling tool to create and maintain project schedules; and**
- **Manage the project financials and review and update the information required for the Technology Consolidated Capital Report as appropriate to ensure project costs and forecasts are accurately reflected.**

Please refer to BC Hydro's response to BCUC IR 1.21.2 for more details.

21.0 C. BC HYDRO APPROVAL AND OVERSIGHT CONTROLS AND PROCESSES

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- Ensure escalation and coordination of issues to support timely resolution.
- Maintain an issue log, report on project risks, and ensure risk treatment plans developed for project risks and implemented on a timely basis.

1.21.4 What is the escalation framework/process made available to project managers? How effective is the process? How much information is escalated and to whom? Please elaborate.

RESPONSE:

The Project Manager is accountable to maintain a risks and issues log, report on project risks and ensure risk treatment plans are developed. When risks materialize, the Project Manager is accountable to implement the risk mitigation plans that were developed for the project. On a case by case basis, the Project Manager may be assisted by the Project Initiator, Project Sponsor, Steering Committee or Executive team with actions required to address a risk.

The key project risks are reported in the monthly standardized project status reports and reviewed with the Project Initiator, Project Sponsor and the project Steering Committee. The project risks are also discussed at the relevant gate reviews and will influence the outcome of the gate.

The Project Manager can escalate issues and risks to the Project Initiator, the Project Sponsor and the Steering Committee. Project Managers can also seek advice from the Technology PMO and/or escalate issues through the PMO. The most complex issues could be escalated to the prior Technology Governance or to the Executive Team if Executive engagement or discussions are required for the resolution of specific issues.

The monthly status reports further allow the Project Manager to raise project issues and risks to the attention of the Technology PMO and potentially the Executive Team reporting level via the Technology Monthly Executive Report. Please refer to BC Hydro's response to BCUC IR 1.21.2.

Issues and risks are usually addressed within the project team. If that is not possible, they are escalated to a higher level for resolution.

The amount of information escalated depends on project specifics and complexity of the specific risk or issue.

21.0 C. BC HYDRO APPROVAL AND OVERSIGHT CONTROLS AND PROCESSES

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- Ensure escalation and coordination of issues to support timely resolution.
- Maintain an issue log, report on project risks, and ensure risk treatment plans developed for project risks and implemented on a timely basis.

1.21.5 Did the various Governance Committees and now does the IT&T Executive Team approve, track and report on Critical Path Milestones identified in project plans? Please explain.

RESPONSE:

Project timelines and high-level milestones are approved as part of the Business Case review process. All project milestones are tracked and managed in Primavera P6 scheduling software in accordance with the IT Project Management Guidelines (pages 50 to 60)(refer to Attachment 18 of the Consolidated Information Filing). Progress towards critical path milestones are reported to project Steering Committees if in place. Changes to Level 1 (In Service Date) and Level 2 (Phase completion) milestones require Project level Change Notices.

As outlined in BC Hydro's responses to BCUC IR 1.14.5 and BCUC IR 1.21.2, the Executive Team receives a Technology Monthly Executive Report that provides updates on schedule performance for any specific project as required. The report includes explanations of any projects that are rated 'Red' on criteria that assess the condition of the project with respect to schedule, cost/budget, and other key measures. The project dashboard attached to this monthly report shows and

describes the 'stoplight' (Red-Yellow-Green) status on Schedule criteria for all active projects in the portfolio.

22.0 C. BC HYDRO APPROVAL AND OVERSIGHT CONTROLS AND PROCESSES

Reference: AUTHORIZATION AND GOVERNANCE
Exhibit B-3, Section 4, pp. 40-41
Internal audit

BC Hydro states on page 40 of its Consolidated Information Filing:

BC Hydro's Audit Services group (with the assistance of external subject matter experts as required) conducts periodic audits of IT&T delivery processes, projects and adherence to solutions delivered by projects, as part of its overall BC Hydro internal audit programming. Management considers and adopts the audit recommendations as appropriate, as part of continuous improvement efforts.

For example, the 2012 audit of the EMPower project resulted in a more prominent role and increased staffing for the Technology PMO, increased focus on project delivery standards and controls, and the 2013 revision of ITDSP resulting in overall better control and performance of IT&T projects.

1.22.1 What triggers an audit? Please explain.

RESPONSE:

Internal audits to be performed by Audit Services are outlined in the annual Internal Audit Plan which is required to be approved by the Audit and Finance Committee of the Board of Directors.

Audits are selected for inclusion in the Audit Plan based on a number of inputs which include enterprise risks, corporate objectives, discussions with Management, Board requests, and areas of significant change in the organization.

The Internal Audit Plan is primarily focused on areas representing the highest potential risk and impact but is flexible and responsive to changing or emerging risks, organizational changes or other business needs.

22.0 C. BC HYDRO APPROVAL AND OVERSIGHT CONTROLS AND PROCESSES

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For example, the 2012 audit of the EMPower project resulted in a more prominent role and increased staffing for the Technology PMO, increased focus on project delivery standards and controls, and the 2013 revision of ITDSP resulting in overall better control and performance of IT&T projects.

1.22.2 What is meant by periodic audits? How frequently does the Audit Services group conduct internal audits?

RESPONSE:

Periodic audits refer to audits that are performed at regular intervals ranging from one year to five years, including in respect of IT processes, such as security, operations, change management and application development.

Internal audits are conducted across various parts of the organization on an ongoing basis and typically take three to four months to complete. The broad categories of audits include operational, core financial process or compliance.

The average number of all internal audits completed annually from fiscal 2008 to 2016 was 12 audits.

22.0 C. BC HYDRO APPROVAL AND OVERSIGHT CONTROLS AND PROCESSES

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For example, the 2012 audit of the EMPower project resulted in a more prominent role and increased staffing for the Technology PMO, increased focus on project delivery standards and controls, and the 2013 revision of ITDSP resulting in overall better control and performance of IT&T projects.

1.22.2 What is meant by periodic audits? How frequently does the Audit Services group conduct internal audits?

1.22.2.1 To date, how many IT&T-related audits has the Audit Services group conducted?

RESPONSE:

Audit Services has conducted 19 IT-related audits from fiscal 2008 to fiscal 2016.

IT-related audits are those with an IT component and include areas such as network security, cybersecurity, operational controls, outsourcing agreements, disaster recovery, investment planning and application development. Attachments 20 to 24 of the Consolidated Information Filing are the audit reports for the investment planning and application development areas, given the relevance of those audits to the scope items of the SAP Inquiry. BC Hydro has attached the reports of the post implementation internal audit of PPM at BC Hydro's response to BCUC IR 1.22.8.

22.0 C. BC HYDRO APPROVAL AND OVERSIGHT CONTROLS AND PROCESSES

Reference: AUTHORIZATION AND GOVERNANCE
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For example, the 2012 audit of the EMPower project resulted in a more prominent role and increased staffing for the Technology PMO, increased focus on project delivery standards and controls, and the 2013 revision of ITDSP resulting in overall better control and performance of IT&T projects.

1.22.3 In what situations would audit recommendations not be adopted or acted upon? Please explain.

RESPONSE:

All audit recommendations are tracked and monitored by Audit Services and reported quarterly to the Audit and Finance Committee of the Board until they are implemented. Any recommendations not adopted are reported to the Audit and Finance Committee and must be justified by management.

Situations where audit recommendations may not be adopted include organizational changes that may render a recommendation redundant, or the cost of implementing a recommendation is prohibitive relative to the benefit to be achieved.

22.0 C. BC HYDRO APPROVAL AND OVERSIGHT CONTROLS AND PROCESSES

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For example, the 2012 audit of the EMPower project resulted in a more prominent role and increased staffing for the Technology PMO, increased focus on project delivery standards and controls, and the 2013 revision of ITDSP resulting in overall better control and performance of IT&T projects.

1.22.4 Who participates in the audits?

RESPONSE:

Participants include management and key personnel involved in the area being audited (referred to as the auditees), responsible Executive (Sponsor of the audit) and staff of the Audit Services group, including subject matter specialists.

22.0 C. BC HYDRO APPROVAL AND OVERSIGHT CONTROLS AND PROCESSES

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For example, the 2012 audit of the EMPower project resulted in a more prominent role and increased staffing for the Technology PMO, increased focus on project delivery standards and controls, and the 2013 revision of ITDSP resulting in overall better control and performance of IT&T projects.

1.22.5 Who are the main users of the audit reports?

RESPONSE:

Audit reports are provided to the BC Hydro Audit and Finance Committee of the Board, the Executive Team, and the management team of the area being audited.

22.0 C. BC HYDRO APPROVAL AND OVERSIGHT CONTROLS AND PROCESSES

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For example, the 2012 audit of the EMPower project resulted in a more prominent role and increased staffing for the Technology PMO, increased focus on project delivery standards and controls, and the 2013 revision of ITDSP resulting in overall better control and performance of IT&T projects.

1.22.6 When assessing a technology project, what does an audit entail? What is measured and what are the measures used to assess a project? What methodologies were used to conduct the audit? Please elaborate using the EMPower project audit as an example.

RESPONSE:

An audit of a technology project entails assessing whether the project was developed and implemented in a controlled manner.

The audit objective of the EMPower audit was to assess whether the IT system development process used to deliver the EMPower project complied with BC Hydro's IT Development Standards, which were the audit criteria used for the evaluation. Specifically, a sample of deliverables including gate approvals were reviewed for the following project phases:

- **Justification, initiation and plan;**
- **Design and development; and**
- **Implementation.**

The audit approach included a review of reports, supporting documentation and interviews with BC Hydro staff and management involved in the project.

Audit Services uses the International Standards for the Professional Practice of Internal Auditing when conducting audits.

22.0 C. BC HYDRO APPROVAL AND OVERSIGHT CONTROLS AND PROCESSES

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For example, the 2012 audit of the EMPower project resulted in a more prominent role and increased staffing for the Technology PMO, increased focus on project delivery standards and controls, and the 2013 revision of ITDSP resulting in overall better control and performance of IT&T projects.

1.22.7 Has BC Hydro ever engaged external auditors to perform IT-related audits? If yes, describe these audits and explain why they occurred. If no, please explain why not.

RESPONSE:

BC Hydro has not engaged external auditors to perform IT-related audits.

Audit Services is responsible to provide independent and objective assurance and consulting services to add value and improve the overall control environment, risk management and operations of BC Hydro and its subsidiaries. Audit Services works with the Audit & Finance Committee of the Board to assist them in fulfilling their oversight responsibility for internal controls, financial reporting and risk management.

Audit Services does engage IT subject matter experts including external auditing firms to supplement existing internal audit resources on some engagements.

BC Hydro's external auditor conducts an annual audit of the consolidated financial statements in accordance with Canadian generally accepted auditing standards to express an opinion on the fairness of the financial statements. As part of the audit, the external auditor will review general IT controls and also review a list of IT projects that went live in the fiscal year to determine if there is impact on financial controls.

22.0 C. BC HYDRO APPROVAL AND OVERSIGHT CONTROLS AND PROCESSES

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For example, the 2012 audit of the EMPower project resulted in a more prominent role and increased staffing for the Technology PMO, increased focus on project delivery standards and controls, and the 2013 revision of ITDSP resulting in overall better control and performance of IT&T projects.

1.22.8 Did BC Hydro conduct internal audits for the following SAP-related projects: Enterprise Financials Upgrade, PPM, PSW, and DWS? If yes, please provide the internal audit reports. If no, please explain why not.

RESPONSE:

A post-implementation internal audit was performed on the PPM project in fiscal 2013 to assess whether the PPM solution tools, practices and procedures were operating effectively. The Summary, Management and Follow-up Audit reports for this project are included as Attachments 1, 2 and 3 to this IR response, respectively.

As part of the IT Planning and Project Delivery Audit completed in March 2016, the DWS project was one of ten projects selected for review to assess whether technology projects were managed in accordance with key requirements of the BC Hydro IT Development Standard (ITDSP). The IT Planning and Project Delivery Management and Summary Audit reports are Attachments 23 and 24 of the Consolidated Information Filing, respectively.

Audit Services did not conduct internal audits on the Enterprise Financials Upgrade and PSW projects as there were other priorities identified for review and included in approved Internal Audit Plans. Please refer to BC Hydro's response to BCUC IR 1.22.1.

BC hydro

SUMMARY AUDIT REPORT

GENERATION

PROJECT AND PORTFOLIO MANAGEMENT AUDIT

Q2 F2013

SEPTEMBER 28, 2012

AU1304GEN

Prepared By:

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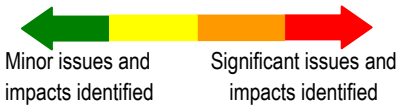
This report contains confidential information and is intended only for the named recipients. Distribution or copying of this report is prohibited without prior approval from Audit Services.

Project and Portfolio Management F2013

AUDIT TYPE	AUDIT RATING
RISK BASED AUDIT	G

Legend:



Audit Objective

- To assess the current implementation and sustainment plans to ensure the Project and Portfolio Management (PPM) solution tools, practices and procedures are operating effectively.

Scope

- Focused on governance, onboarding and sustainment and current state of implementation in Generation. The audit is the first of a two part audit as a subsequent audit will be conducted in T&D in F14 that will look at compliance.

Background

- BC Hydro is spending $2B each year over F12 to F15 to refurbish its heritage assets and undertake new projects to meet future electricity demand. This calls for consistent, scalable project management practices and reporting of capital projects.
- A Project Portfolio Management (PPM) solution was completed in March 2012 at a cost of $29M. PPM is an integrated suite of tools and practices designed to facilitate the delivery of engineering construction projects in Generation and T&D.
- Generation projects are expected to be fully onboarded into the PPM solution by September 2012. Several sustainment committees are responsible to address implementation issues.
- Six core component tools comprise the integrated Project Portfolio Management solution;
  - **SAP Project Systems** for actual costs, resource supply and work breakdown structures,
  - **Primavera P6** allows for scheduling and forecasting resource demand,
  - **PPM Workspace** includes the PPM Knowledge Centre and supports document management and collaboration,
  - **Business Warehouse** a data warehouse to provide consolidated reporting between systems,
  - **Practice Reference Tool** contains project delivery practices and templates, and
  - **FileNet** a secure storage management system for document archiving.
- Several new roles were created around the solution and others had elements redefined which necessitates adjustments in responsibilities for project team members. The new solution includes the following roles: Project Manager, Scheduler, Work Package Manager, Functional Manager, Cost Analyst and Estimator.
- The PPM solution is a sophisticated and complex tool with significant functionality that when fully utilized will provide powerful project management oversight. It will require time, training and perseverance by employees to familiarize themselves with the features available and to build the requisite competency levels to fully maximize the potential of the solution.

Project and Portfolio Management F2013

Key Findings

- The PPM solution has been implemented however it is still in the transitional sustainment phase. There are clear plans for onboarding and sustainment, with comprehensive practices and procedures and an integrated set of tools to improve project delivery.
- Key areas of improvement noted during the audit include:
  - Providing additional training for employees to fulfill new responsibilities,
  - Further refinement of tools to function as designed, and
  - Providing a key resource to support the sustainment model for the Community of Practice.

Governance

- There is effective oversight of the PPM solution with a strong governance framework in place. This includes well documented policies, practices, and procedures, clearly defined roles and responsibilities for key roles.
  - Some practices require updating and there are change management issues with the acceptance of new roles. Management anticipated these issues and at the time of the audit were revising plans for transition into the roles.
- A Quality Assurance process is being implemented to ensure integration and standardization occurs however, quality assurance process documentation requires updating.

Onboarding

- Clear plans and schedules were developed for onboarding of projects onto the PPM solution with appropriate guidance provided. Onboarding will be completed by September 2012.
  - Interviews raised some concerns that the focus was to meet onboarding deadlines rather than quality of work. This was a conscious decision made by Management to get the projects up- loaded and then make further refinements.
- As part of the onboarding process, a training plan is in place with the majority of employees having completed baseline mandatory training for key components. However, additional training is required to develop compentencies and skills in the use of the tools.
  - Specific areas include; further training on project delivery practices, training in remote locations and soft skills training for the new role of Work Package Managers which Management will address in their F13 Generation Initiatives.

Sustainment

- All key components of the PPM solution are in place and most tools are operational. Management is strongly committed and has a well-documented plan for sustainment which is expected to be ongoing until the system is stable and reliable.
- The following issues may have the largest impact on the successful sustainment of the solution.

Project and Portfolio Management F2013

- A key role in the sustainment model is the Manager of Community of Practices position which is currently vacant. Generation Management was providing some temporary support.
- At the time of the audit, the Business Warehouse reporting tool was not operating as designed due to interface issues and availability of Information Technology resources. Management subsequently identified that progress has been made in this area and all current reporting issues are anticipated to be resolved by September 30, 2012.
- Additional training is necessary for many employees to carry out their new roles effectively.

- During the audit, no central process existed to log, action and resolve sustainment issues. Sustainment sub-committees independently addressed their specific issues which were not being resolved in a timely manner with limited documentation on issue management process.
  - Management was informed and plans are being developed to address this concern.

PPM Solution Functionality

- The key components of the PPM solution are functioning and being utilized as intended, however the Business Warehouse tool is not fully available for monitoring and reporting and there are some concern over the availability of IT resources.
  - The Business Warehouse tool is not able to fully integrate information from other tools without manual intervention due to issues with data and reporting scripts.
- The control environment includes access controls built into each of the PPM tools to prevent or reduce the risk of unauthorized changes. These controls are working and are aligned with the key roles for segregation of duties. Reliance is placed on timely management review and the Quality Assurance function to provide oversight over the practice areas.
- With PPM in its early phases of implementation, a full compliance review was not possible. Some preliminary testing was performed on a small sample of projects that were onboarded.
  - Initial findings indicated that not all documents were posted on workspace and the versions posted were not always the approved versions.

Management Comments and Action Plans

- Management agrees with the recommendations in the audit report and will address the recommendations by March 2013.

BC hydro

MANAGEMENT AUDIT REPORT

GENERATION

PROJECT AND PORTFOLIO MANAGEMENT AUDIT

Q2 F2013

SEPTEMBER 28, 2012

AU1304GEN

Prepared By:

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Project and Portfolio Management F2013

CONTENTS

AUDIT	TYPE	RATING
PROJECT AND PORTFOLIO MANAGEMENT 1a. Executive Summary ..... 3 1b. Background ..... 3 1c. Audit Objective and Scope ..... 4 1d. Findings, Recommendations and Management Action Plans ..... 5 Governance ..... 5 Onboarding and Sustainment ..... 8 PPM Solution 11	RISK BASED AUDIT	G

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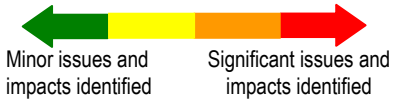

Project and Portfolio Management F2013

1a. Executive Summary

- For each audit, Audit Services provides two separate Audit Reports. The first report is a Summary Audit Report prepared for Senior Management and the Audit and Finance Committee (AFC) of the Board. This Management Audit Report provides additional information and related audit recommendations for management purposes and will not be presented to the AFC.
- Management should also refer to the Summary Audit Report for high level conclusions and findings.

1b. Background

- BC Hydro is spending $2B each year over F12 to F15 to refurbish its heritage assets and undertake new projects to meet future electricity demand. This calls for consistent, scalable project management practices and reporting of capital projects.
- To address this need BC Hydro has developed a Project and Portfolio Management (PPM) solution at a cost of $29M which was completed in March 2012. PPM is an integrated suite of tools and practices designed to facilitate the delivery of engineering construction projects in Generation and T&D.
- Generation projects are expected to be fully onboarded into the PPM solution by September 2012. Several sustainment committees are involved in addressing implementation issues.
- Six core component tools comprise the integrated Project Portfolio Management solution;
  - **SAP Project Systems** for actual costs, resource supply and work breakdown structures,
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- Several new roles were created around the solution and others had elements redefined which necessitates adjustments in responsibilities for project team members. The new solution includes the following roles; Project Manager, Scheduler, Work Package Manager, Functional Manager, Cost Analyst and Estimator.
- PPM solution is a sophisticated and complex tool with significant functionality that when fully utilized will provide powerful project management oversight capability. It will require time, training and perseverance by employees to familiarize themselves with all of the features available and to build the requisite competency levels to fully maximize the potential of the solution.

Project and Portfolio Management F2013

1c. Audit Objective and Scope

Objective

- To assess the current implementation and sustainment plans to ensure the Project and Portfolio Management (PPM) solution tools, practices and procedures are operating effectively.

Scope

- Review the current key business risks, processes and controls with the implementation of the PPM solution as well as onboarding and sustainment.
  - **Governance** – Oversight, policies and procedures, roles and responsibilities and quality assurance for integration and standardization.
  - **Onboarding and Sustainment** – Assess plans and schedules for onboarding, training and sustainment processes.
  - **PPM Solution** – Functionality and current state of key components, walkthrough of a sample of projects and compliance testing where feasible.
- This audit is the first part of a two part audit on the PPM solution. A subsequent audit of the PPM solution will be conducted in T&D in F14.
- Initial scoping identified that the PPM solution was not yet fully operational. This audit identified the current state of implementation in Generation, key risks, and management efforts to successfully integrate and embed these tools and practices into the project delivery process.
- The majority of fieldwork was conducted from July to mid-August 2012. Audit Services recognizes that improvements may have been made subsequent to the completion of the fieldwork.
- As part of this audit, we interviewed employees at key levels within the PPM solution. We selected five project managers, five schedulers, three work package managers, one functional manager, one estimator, and one cost analyst.

Project and Portfolio Management F2013

1d. Findings, Recommendations and Management Action Plans

Summary

The PPM solution is operating with comprehensive practices and procedures, clear plans for onboarding and sustainment, and a strong network of tools to improve project delivery.

To ensure the success of the PPM solution, areas requiring focus include providing additional training for some employees, further refinement of tools to function as designed, and adequate resources to support the sustainment model.

Governance

Overall Conclusion

There is effective oversight of the PPM solution with a strong governance framework in place. This includes well documented policies, practices, and procedures, clearly defined roles and responsibilities for key roles, and a Quality Assurance process.

Key Conclusions and Findings

Policies, Practices, and Procedures

Policies, practices, and procedures are well documented in the Practices Reference Tool (PRT), easily accessible, and well understood by PPM users, however some practices require updating.

- Practices and procedures are governed by the PPM Practices Development and Review Committee which is responsible for the continual improvement of the practices. The committee is comprised of Practice Leaders and is chaired by the PPM Practice Program Manager.
- There are 12 practices and each practice, except the Aboriginal Relations and Negotiation practice, has a Practice Leader from Generation and T&D. This allows for integration of the practices as the Practice Leaders work together to update practices.
- Practices are well documented in the PRT however; the content has not been fully updated. Most practices have not been updated to reflect the use of PPM tools, several templates have yet to be developed and practices have not been updated for projects below $1M.
  - The Practices Development and Review Committee is aware that updates need to be made to practices and have indicated that it will take 18 months to complete these updates.
- Overall, PPM users did not have issues with the practices, however, most schedulers indicated that there have been so many changes to procedures that it is often difficult to keep up-to-date.
  - Management stated changes are communicated through e-mail and bi-weekly meetings. Changes are also piloted before making them available.

Project and Portfolio Management F2013

Roles and Responsibilities

Roles and responsibilities are clearly defined, well documented and understood for key roles however there have been issues with the acceptance of some roles.

- There is a strong governance structure in place with four main PPM committees responsible for the sustainment and continuous improvement of the PPM solution: Governance, Practices Development and Review, Tools Sustainment, and Community of Practice.
  - The roles and responsibilities for each of the committees have been well documented.
  - Major changes to the PPM solution require the approval of the Governance Committee, which includes VP"s from both Generation and T&D.
  - Regular progress updates and issues are presented to the Governance Committee.
- Generation Project Delivery has reorganized their group to support the roll out of PPM and increase the focus on schedules and supervision. There are six key PPM roles: Project Manager, Work Package Manager (WPM), Scheduler, Functional Manager, Cost Analyst and Estimator.
  - Roles and responsibilities for the key PPM roles are clearly defined and well documented through the Role Definition document.
  - Based on interviews, PPM users indicated they have a clear understanding of their roles and responsibilities however; there are some issues with the acceptance of roles.
    - Some Work Package Managers feel they do not have the soft skills necessary for their new roles and schedulers feel they do not have the time to focus on the analytical aspect of their role. Management expected acceptance issues and are revising plans for change management and transition into these roles.
    - Cost Analysts feel that their role is not being given enough importance and support. The training materials and procedures for this role have not been updated.
- There are approximately 16 consultants currently involved with the sustainment of the PPM solution. Management has appropriately created formal knowledge transfer plans between the consultants and BC Hydro employees for the more complex aspects of the solution.

Quality Assurance

A Quality Assurance process is being implemented to ensure integration and standardization occurs however process documentation requires updating.

- Quality Assurance (QA) functions are supported by three main groups; Quality Management, Scheduling, and Project Controls.
  - The Quality Management group undertakes quarterly Practice Application Reviews to assess the level of conformity to the PPM Practices deliverables appropriate for each line of business.
  - On a monthly basis, schedulers perform a QA review of their project schedule, while Project Scheduling Team Leads and the Project Services Manager perform independent Quality Control reviews.

Project and Portfolio Management F2013

- The Project Controls and Standards group is responsible for ensuring practices are being followed through the monitoring of the project"s performance against PPM practices.
  - The Project Controls and Standards group has not been able to monitor Performance Indicators in Workspace as they have been focusing on Business Warehouse issues.
  - The process for gate reviews (reviews performed to ensure Document Management practices are followed) and monitoring of lists on Workspace has not been documented.

	Recommendations	Management Action Plans
	Governance	
1.	❑ Management should ensure; ♦ Missing templates are updated in PRT, ♦ Practices reference the new PPM tools, and ♦ Continue to enhance practices for smaller projects (< $1M).	❑ Over the next 18 months, Practice Leaders will ensure additional templates are created where needed. Consideration will also be given for smaller projects. The majority of these are associated with new practices that were released in the past 12 months. ❑ The Practices Development and Review committee will reference the new PPM workspace tools, where applicable, by December 2012.
2.	❑ Management should ensure Schedulers are given the time to focus on the analytical aspects of their role. ❑ Training materials and procedures for the Cost Analyst role should be updated and an assessment on how Cost Analysts are transitioning into their roles should be completed.	❑ Project and Portfolio Services (Generation) will focus on improving the quality of the data through analysis by March 2013. Management is also actively monitoring workload to ensure that sufficient time is available to focus on schedule quality. ❑ As part of our F13 Key Generation Initiative for PPM Sustainment, the team has been receiving support from Change Management to assist with the transition and to build the team. SAP training materials are being reviewed and updating of the materials is being led by the OCIO. Expected to be completed by March 2013.
3.	❑ Management should monitor the Performance Indicators on Workspace and document the process for gate reviews, exception reports, and reviews to ensure practices are followed.	❑ The Project Controls and Standards group will be establishing monitoring procedures and documenting processes by March 2013. All known reporting issues are anticipated to be complete by September 30, 2102.

Project and Portfolio Management F2013

Onboarding and Sustainment

Overall Conclusion

Management has good plans in place for onboarding and training and an effective sustainment framework. Opportunities for improvement include providing additional training, ensuring tools are operating as designed and key positions are filled.

Key Conclusions and Findings

Onboarding

Clear plans and schedules were developed for onboarding onto the PPM solution. Appropriate guidance was provided, collaboration has occurred within the groups and training plans align with the onboarding plans.

- Management chose to onboard projects onto the solution in waves, beginning with Primavera P6 and then Workspace. Eligibility criteria was established to identify projects for onboarding.
  - Five key projects were selected for the initial wave for onboarding over a three month period. The remainder of the 50 plus projects were also onboarded in waves.
- A thorough and clear onboarding plan was created for Generation with adequate guidance provided for the onboarding process to ensure that plans were met. Generation has shared their plans with T&D. Any issues related to onboarding have either been resolved or are in the processs of being resolved.
- Interviews were held with key individuals using the PPM solution and most felt the onboarding process went well with some concerns;
  - Short time frame given to onboard projects onto the PPM solution,
  - Some felt the focus was on meeting onboarding deadlines rather than quality of work, and
  - This was a conscious decision made by Management.

Training

A comprehensive training plan is in place for Generation with the majority of employees having completed mandatory training however, concerns identified include limited training on soft skills (related to people management) and practices, training at remote locations and the accuracy of the training schedule.

- The training plan aligns with the onboarding plan and teams are required to attend training on Primavera P6 and workspace before their projects are onboarded onto these tools.
- Training is provided on a variety of platforms, through hands on in class training, ilearn, and lunch and learn sessions. A detailed training schedule is used to determine which training sessions employees in each of the key roles must attend. It was noted that:
  - Some employees have yet to attend mandatory training and are continually declining invitations to attend sessions and

Project and Portfolio Management F2013

- The training schedule did not correctly identify some employees' roles while other employees were missing completely from the schedule.

- During the interviews several concerns were identified by employees.
  - Employees in remote locations believe they have not received enough on-site training. In addition, some employees interviewed believe more hands on training would be beneficial.
  - A new key role is that of the Work Package Managers who stated they require additional soft skills training for them to be successful in their new roles. Management is aware of this and will be creating a plan to address this concern as part of their key F13 Generation Initiatives.
  - Limited training has been provided in relation to project management practices which have undergone some changes.

Sustainment

There is an effective process and plan in place for sustainment however key issues must be resolved to ensure that the overall solution continues to properly function and remain stable.

- The sustainment model contains clear accountabilities and processes. Key components of the PPM solution and integration have been appropriately considered in the sustainment model.
  - The Governance Committee is accountable for the sustainment and continual improvement of the PPM System. This committee is supported by three sub-committees and leaders from each of the sub-committees prepare a yearly enhancement plan which outlines the key initiatives necessary for sustainment.
- The following issues may have the largest impact on the successful sustainment of the solution.
  - Ensuring PPM tools (specifically Business Warehouse currently) are operating effectively and adequate resources are provided by the Office of the Chief Information Officer to the management of these issues.
  - Many employees felt additional soft skills training is necessary for them to carry out their jobs effectively.
  - A key resource identified in the sustainment model, the Community of Practices Manager role, has not been filled however Generation Management is providing some support temporarily.

Issue Management

Currently, a centralized process does not exist to ensure all issues are logged, actioned and remedied.

- The Tools and Sustainment committee has a good process for documenting and managing issues however, the Practices Development and Review committee is only logging issues. As well, the Community of Practice committee do not currently have a formal process for issue management.
  - At the time of the audit there was no central repository of all issues and there is limited documentation on the issue management process. This was communicated to Management who are working to develop plans to address this.

Project and Portfolio Management F2013

- Not all issues related to practices have been addressed for the past 18 months. Management decided to focus on updating practices before addressing all issues.

- During the interviews it was also noted that some employees are not aware of the existence of the helpdesk to assist in resolving issues.

	Recommendations	Management Action Plans
	Onboarding and Sustainment	
4.	❑ Management should; ♦ Ensure all employees in key roles within the PPM solution complete their mandatory training, ♦ Review the training schedule for accuracy of the roles identified and ensure all employees have been appropriately included, ♦ Evaluate which employees need additional soft skills training and offer the necessary training, ♦ Provide additional training required in remote locations, and ♦ Consider revising training courses to have a larger hands-on component.	❑ Community of Practice Operational Leadership Team (OLT): ♦ Will continue to monitor the delivery of PPM training, the quality and content of training materials, including monitoring training penetration, adequacy, and hands-on component. ♦ Will ensure soft skills training requirements and training for remote locations will be considered in a report to the OLT by March 2013.
5.	❑ Management should ensure training on practices is provided.	❑ The Practices Development and Review Committee has deferred training for Generation to Jan 2013 at which point training on the practices shall resume. This ongoing training will focus on changes that have occurred over the past 18 months (e.g. Project Quality Plans).
6.	❑ Management should ensure continued focus is maintained to ensure Business Warehouse is working as designed. The OCIO should ensure adequate resources are provided.	❑ The Tools and Sustainment Committee will work with the OCIO group to define performance levels related to resolving defects. Expected completion date March 2013.
7.	❑ Management should ensure the Community of Practices Manager role is filled.	❑ The Community of Practices Manager will be provisioned for using contract resources for the remainder of F13. ❑ Work to create this position as a FTR employee role will continue, seeking an F14 hiring.

Project and Portfolio Management F2013

	Recommendations	Management Action Plans
8.	❑ Management should create an integrated process for issue management which includes ♦ a central repository of all issues, ♦ a process to ensure that issues are addressed in a timely manner and ♦ documentation of the process.	❑ The Sustainment Committees will ccreate a consolidated PPM System Issues List within the PPM Knowledge Center. Expected completion date March 2013.
9.	❑ Management should raise awareness with users as to the existence of the helpdesk.	❑ Re-communicate PPM Knowledge Center trifold to PPM user community. Expected completion date December 2012.

PPM Solution Functionality

Overall Conclusion

Most PPM tools are fully functioning and meeting the operational needs however reporting requires further refinement to be effective. PPM practices are still developing in terms of process documentation and compliance.

Key Conclusions and Findings

Tool Functionality

The key functions for each of the tools, other than Business Warehouse tool ("BW"), are fully functioning and being utilized as intended. The Business Warehouse tool has not been effective for monitoring and reporting and requires further refinement.

- ❑ Most tools are fully functioning and being utilized as intended. At the start of the audit, BW was not available for timely reporting of project information.
  - ♦ Daily data uploading was not available during working hours due partly to the unexpectedly large number of project and files in Primavera P6. This issue was subsequently resolved prior to completion of audit fieldwork.
    - ➢ Potential risk exists that increased number of files and projects from onboarding additional projects onto Primavera P6 will lead to the same issue of daily BW updates being delayed.
- ❑ At the time of the audit, monitoring and reporting is currently deficient as BW is not able to report information from other tools without manual intervention.
  - ♦ BW is able to extract data from other tools, but issues with source reporting data and reporting scripts has limited its use.
  - ♦ BW was not able to extract correct cash flow information due to a software bug in Primavera P6 that has hindered the ability to track changes to cash forecasts.

Project and Portfolio Management F2013

- Management has a detailed plan to resolve these issues by the end of September 2012.

- As employees become more experienced there will be further utilization of the advanced features within the tools. Some project team members are currently utilizing a Primavera P6 feature that customizes views to enhance project monitoring and reporting. This feature was discovered by users as they became familiar with the system but is not being utilized by all users.

Control Environment

Key access controls have been built into each of the PPM tools to prevent or reduce the risk of unauthorized changes. Other built-in controls are limited and are being compensated through segregation of duties.

- The PPM solution has few direct built-in controls to ensure completeness and accuracy of data. The key controls are primarily based on the segregation of roles as assigned in the PPM solution. Additional controls include;

  - Reliance is placed on timely management review to ensure work packages are updated. Work Package indicators in Primavera P6 are used by Work Package Managers to inform Schedulers and Project Managers of completed work package updates including their review.

    - Indicators are not always used correctly and are set to „complete" even when updates have not been performed.

  - Greater reliance was placed on people controls to manage rather than on built-in controls to ensure completeness and accuracy of data. The Quality Assurance Function provides oversight and serves as a compensating control.

Compliance with Practices

Although PPM practices are generally being followed, there are inconsistencies in ensuring key documents are included on Project websites.

- With PPM in its early phases of implementation, a full compliance review was not possible. Some preliminary testing was performed on a small sample of projects that were onboarded. Current practices were relatively unchanged since pre-implementation of PPM and are generally understood. Practice development is an ongoing process that still requires updating.

  - Most practices have not been updated to reflect the use of PPM tools.

- The Practices Reference Tool contains variants for each practice which have been created based on the size and complexity of the project. The variants are understood by users though some feel the variants are too detailed for smaller, less complex projects and would appreciate further guidance.

  - Management believes the practices should allow project managers to exercise judgement when scaling a project while still maintaining the integrity of the practices.

Project and Portfolio Management F2013

- Inconsistencies were found in the management of documents posted on PPM Workspace.
  - Work Package Agreements were either not all posted or unsigned copies were included.
  - Other key documents, including business cases and project plans, were posted though were not always approved versions.
- Review of test projects revealed that only five of the seven approved KPIs from the Performance Management Practice are populated in the Project workspace.
  - KPIs related to the Hazard Log Conformance Index (HCI) and the Schedule Performance Indicator (SPI) was missing.

	Recommendations	Management Action Plans
	PPM Solutions	
10.	❑ Management should continue to evaluate the performance impact on daily BW updates when onboarding additional projects.	❑ The Tools and Sustainment Committee will continue current monitoring practice and forecast system demands based on PPM on-boarding plans of each business unit.
11.	❑ Management should ensure the Work Package Indicator in Primavera P6 is used by Work Package Managers to signify that progressions are complete.	❑ Management has revised the process going forward and will have project teams meet and progress the schedule together. The Scheduler will update the Work Package Manager Indicator in P6. The Project Manager will ensure updates are gathered and updated in the schedule. This will be completed by December 31 2012.
12.	❑ Management should ensure all active Work Package Agreements be signed and posted onto the respective project workspace.	❑ Signed Work Package Manager Agreements are required for Gate Reviews. The Document Controller Manager will be reviewing the various project workspace sites for compliance. With all projects onboarded, the focus will now be on completeness and accuracy of the information on the project workspace sites. Expected completed by March 2013.
13.	❑ Management should ensure that the Performance Measurements practice defines which Key Performance Indicators are recommended as mandatory.	❑ The Practices Development and Review committee will ensure that the practice indicates which key performance indicators are recommended as mandatory. Expected completion March 2013.

INTERNAL AUDIT FOLLOW-UP REPORT

PROJECT AND PORTFOLIO MANAGEMENT AUDIT

(AUDIT REPORT DATE: SEPTEMEBER 28, 2012)

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PPM Audit - Follow up

	Recommendations	Management Action
	Governance	
1	❑ Management should ensure: ♦ Missing templates are updated in Practices Reference Tool (PRT), ♦ Practices reference the new PPM tools, and ♦ Continue to enhance practices for smaller projects (< $1M).	❑ **Complete.** Management has made significant updates to PRT including enhancements and clarification to practices/procedures, associated process maps and templates. Practices have been updated to include reference to PPM workspace tools. Management has also created a PPM Low Complexity Variant for smaller projects which is being used as part of a pilot project.
2	❑ Management should ensure Schedulers are given the time to focus on the analytical aspects of their role. ❑ Training materials and procedures for the Cost Analyst role should be updated and an assessment on how Cost Analysts are transitioning into their roles should be completed.	❑ **Complete.** Management reduced the time needed to work on the monthly progression which has freed up time for additional analytic work. Additionally a Quality Assurance/Quality Control (QA/QC) review is now a standard practice within the monthly project progression cycle. ❑ Updated training plans were prepared for Cost Analysts with their managers. New training programs were created and delivered for the cost analyst role and additional online guidance has also been developed.
3	❑ Management should monitor the Performance Indicators on Workspace and document the process for gate reviews, exception reports, and reviews to ensure practices are followed.	❑ **Complete.** New Key Performance Indicators were developed and communicated to Generation Project Managers and Schedulers. Project Performance Indicators are included in monthly reporting provided to the Generation Management Team. ❑ An outline of the revised Gate Review process guide, with the purpose, structure and content was presented by the Principal Engineer for Project Management at the June 2013 PPM Governance meeting and was approved by the PPM Governance committee.

PPM Audit - Follow up

	Recommendations	Management Action
	Onboarding and Sustainment	
4	❑ Management should: ♦ Ensure all employees in key roles within the PPM solution complete their mandatory training, ♦ Review the training schedule for accuracy of the roles identified and ensure all employees have been appropriately included, ♦ Evaluate which employees need additional soft skills training and offer the necessary training, ♦ Provide additional training required in remote locations, and ♦ Consider revising training courses to have a larger hands-on component.	❑ **Complete.** Training included the development of new courses, site visits, softs skills training, training in remote locations and sessions offered through Live Meeting based on the needs within that PPM role. ❑ In F13 the Community of Practice Organizational Learning Team engaged a consultant to assess the current state of training and knowledge retention for key PPM roles, and to make recommendations for a consistent and engaging knowledge plan going forward. Recommendations are being incorporated into the development of a comprehensive long term training plan. The work includes a training needs assessment for key PPM roles, an inventory of existing PPM training, and a prioritized training gaps work plan.
5	❑ Management should ensure training on practices is provided.	❑ **Complete.** Training was provided to specific Generation groups during F13 and F14 for significant changes to the PPM Practices. A comprehensive long term training plan is currently under development for inclusion in the F14 Enhancement Plan. This will include input from a study of existing training materials done in early 2013.
6	❑ Management should ensure continued focus is maintained to ensure Business Warehouse is working as designed. The OCIO should ensure adequate resources are provided.	❑ **Complete.** Business Warehouse (BW) reporting is fully embraced by the Generation Project Delivery organization. BW is working as designed, as the quality of the report data is no longer questioned.
7	❑ Management should ensure the Community of Practices Manager role is filled.	❑ **Complete.** The Community of Practices Manager role is currently being filled by a contractor. Given the limitations on the headcount, the Practices Development and Review Committee has determined that this role would continue to be filled on a contract basis.

PPM Audit - Follow up

	Recommendations	Management Action
8	❑ Management should create an integrated process for issue management which includes: ♦ A central repository of all issues, ♦ A process to ensure that issues are addressed in a timely manner and ♦ Documentation of the process.	❑ **Complete.** A Consolidated Issues List was created in PPM Knowledge Centre and SAP solutions manager to identify all changes requested to the Integrated PPM Solution. Change Requests are actively managed to allow proper prioritization of the implementation of change requests and the optimization of the use of development resources.
9	❑ Management should raise awareness with users as to the existence of the helpdesk.	❑ **Complete.** The Knowledge Centre Tri-fold was widely distributed at PPM meetings and is available online.
	PPM Solution Functionality	
10	❑ Management should continue to evaluate the performance impact on daily BW updates when onboarding additional projects.	❑ **Complete.** The PPM Tools and Sustainment Committee continues to monitor and evaluate system demands based on PPM on-boarding plans of each business unit. Current performance is seen as acceptable and BW loading times are being monitored.
11	❑ Management should ensure the Work Package Indicator in Primavera P6 is used by Work Package Managers to signify that progressions are complete.	❑ **Complete.** The Work Package Indicator is part of the monthly project progression cycle and is also available for consolidated reporting within the Business Warehouse. There have been monthly progression process updates which were communicated to all staff.
12	❑ Management should ensure all active Work Package Agreements be signed and posted onto the respective project workspace.	❑ **Complete.** Management has conducted a review to ensure that all active Work Package Agreements have been signed and posted onto the respective project workspaces. On-going monitoring will continue to ensure compliance and will be the responsibility of the Manager, Document Controller.

PPM Audit - Follow up

	Recommendations	Management Action
13	❑ Management should ensure that the Performance Measurements practice defines which Key Performance Indicators are recommended as mandatory.	❑ **Complete.** A standard set of performance indicators has been developed and agreed upon by Generation Project Delivery and Generation Management Team for inclusion in the monthly Project and Portfolio reporting package. The reporting requirements have been communicated to Generation Project Managers and Schedulers. The Performance Management Practice was updated during F13 and contains guidance on using performance Indicators.

22.0 C. BC HYDRO APPROVAL AND OVERSIGHT CONTROLS AND PROCESSES

Reference: AUTHORIZATION AND GOVERNANCE
Exhibit B-3, Section 4, pp. 40-41
Internal audit

BC Hydro states on page 40 of its Consolidated Information Filing:

BC Hydro's Audit Services group (with the assistance of external subject matter experts as required) conducts periodic audits of IT&T delivery processes, projects and adherence to solutions delivered by projects, as part of its overall BC Hydro internal audit programming. Management considers and adopts the audit recommendations as appropriate, as part of continuous improvement efforts.

For example, the 2012 audit of the EMPower project resulted in a more prominent role and increased staffing for the Technology PMO, increased focus on project delivery standards and controls, and the 2013 revision of ITDSP resulting in overall better control and performance of IT&T projects.

1.22.9 Did BC Hydro engage external auditors to audit any of the following SAP-related projects: Enterprise Financials Upgrade, PPM, PSW, EMPower, and DWS? If yes, please provide the external audit reports.

RESPONSE:

BC Hydro did not engage external auditors to audit any of the listed projects.

23.0 C. BC HYDRO APPROVAL AND OVERSIGHT CONTROLS AND PROCESSES

Reference: FINANCIAL OVERSIGHT AND PROJECT DELIVERY GOVERNANCE
Exhibit B-3, Section 4.6, Table 9, pp. 34, 44-50
Financial oversight and project delivery governance for SAP-related projects

BC Hydro states the following on page 44 of the Consolidated Information Filing: "For the purpose of Table 9, the summary comment on governance that "Successful project outcomes delivered" means that a solution was implemented with little downtime to the organization and is in productive use, functioning largely as expected."

1.23.1 Please provide a more detailed list of assessment criteria which may be used to assess whether each project listed in Table 9 would receive a "Good", "Fair" or "Poor" rating for Financial Oversight and Project Delivery Governance.

RESPONSE:

BC Hydro does not use "Good", "Fair" or "Poor" ratings for compliance with financial oversight and project delivery governance.

BC Hydro considered such an assessment to support its Consolidated Information Filing and again for the purposes of this IR, but could not define a robust set of criteria that it could reasonably defend given the necessarily subjective approach required. The major limitations are a lack of complete knowledge and context of the reasons for any non-compliance dating back over the 8-year time period under review and the reasons non-compliance might not have been promptly addressed.

BC Hydro remains of the view that Table 9 in the Consolidated Information Filing is a helpful summary of the major exceptions to compliance with financial oversight and project delivery governance. However, BC Hydro does provide in its response to BCUC IR 1.23.1.1 a revised Table 9A to supplement the original Table 9. Table 9A identifies project compliance with financial controls, "Yes" or "No", and whether projects substantially align with project delivery governance standards, "Yes" or "No". Projects that "substantially align" are projects that followed project delivery governance standards in all material respects.

BC Hydro highlights that the assessment reported in Table 9A is representative: since fiscal 2014 the majority of SAP-related projects have been compliant with financial controls and project delivery has been robust and well-managed, as discussed in section 4 of the Consolidated Information Filing.

23.0 C. BC HYDRO APPROVAL AND OVERSIGHT CONTROLS AND PROCESSES

Reference: FINANCIAL OVERSIGHT AND PROJECT DELIVERY GOVERNANCE
Exhibit B-3, Section 4.6, Table 9, pp. 34, 44-50
Financial oversight and project delivery governance for SAP-related projects

BC Hydro states the following on page 44 of the Consolidated Information Filing: "For the purpose of Table 9, the summary comment on governance that "Successful project outcomes delivered" means that a solution was implemented with little downtime to the organization and is in productive use, functioning largely as expected."

1.23.1 Please provide a more detailed list of assessment criteria which may be used to assess whether each project listed in Table 9 would receive a "Good", "Fair" or "Poor" rating for Financial Oversight and Project Delivery Governance.

1.23.1.1 Please revise Table 9 to include a column which ranks each project as "Good", "Fair" or "Poor" and provide an accompanying explanation for this ranking based on the criteria described in response to BCUC IR 23.1.

RESPONSE:

As described in BC Hydro's response to BCUC IR 1.23.1, Table 9A below identifies project compliance with financial controls and whether projects substantially aligned with BC Hydro's project delivery governance standards. The assessment is representative: since fiscal 2014 the majority of SAP-related projects have been compliant with financial controls and project delivery has been robust and well-managed, as discussed in section 4 of the Consolidated Information Filing.

Please note the following:

- **Projects identified as "Not available" are projects for which a record of compliance with financial oversight or with project delivery governance standards could not be found; and**
- **Projects identified as "Not applicable" are those projects that relate to SAP licensing for which project governance is not required.**

Summary of Compliance Assessment in Table 9A

The following tables summarize the indicated compliance in Table 9A that follows further below. The noted time periods in these summary tables correspond generally to the discussion of project delivery governance over time in section 4.5 of the Consolidated Information Filing, and are also responsive to CEC IRs 1.12.2, 1.13.1 and 1.14.1. For the purposes of this

Compliant with Financial Controls	F2009 to F2010		F2011 to F2013		F2014 to F2016	
	#	%	#	%	#	%
Yes	1	12%	12	41%	34	92%
No	6	76%	16	55%	3	8%
Not available	1	12%	1	4%	0	0%
Total	8	100	29	100	37	100

Substantially Aligned with Project Delivery Governance Standards	F2009 to F2010		F2011 to F2013		F2014 to F2016	
	#	%	#	%	#	%
Yes	3	38%	17	59%	36	97%
No	2	25%	9	31%	0	0%
Not available	2	25%	3	10%	0	0%
Not applicable	1	12%	0	0%	1	3%
Total	8	100	29	100	37	100

Table 9A

Project	Start Date	Status	Comments	Compliant with Financial Controls	Substantially Aligned with Project Delivery Governance Standards
RIB IT Implementation	F2009	Closed	• Successful project outcomes delivered • Record of memo recommending approval; no record of signed EAR	Not available	Not available

Project	Start Date	Status	Comments	Compliant with Financial Controls	Substantially Aligned with Project Delivery Governance Standards
SAP Financials Licenses	**F2009**	**Closed**	• **Successful project outcomes delivered** • **Overspent for 17 months by up to $1 million prior to EAR approval**	**No**	**Not applicable**
Enterprise Financials Upgrade	**F2009**	**Closed**	• **Successful project outcomes delivered** • **Overspent for five months by up to approximately $300,000**	**No**	**Yes**
PPM	**F2009**	**Closed**	• **Successful project outcomes delivered** • **Project completion report required but not finalized or approved**	**No**	**Yes**

Project	Start Date	Status	Comments	Compliant with Financial Controls	Substantially Aligned with Project Delivery Governance Standards
EMPower Project	**F2009**	**Closed**	• **Successful project outcomes delivered** • **Overspent for three months by up to approximately $400,000 prior to EAR approval** • **Overspent for 13 months by up to $12.5 million prior to EAR revision approval, but final costs within the EAR approval amount of $18.6 million** • **Steering committee was in place providing decisions and governance, but the methodology followed did not align with the ITDSP framework.**	**No**	**No**
SAP Common Infrastructure	**F2010**	**Closed**	• **Successful project outcomes delivered** • **Overspent on completion by $50,000** • **No record of the project governance that was followed**	**No**	**Not available**
F10 SAP Infrastructure	**F2010**	**Closed**	• **Successful project outcomes delivered** • **CIO approved EAR revision of $1.1 million when approval limit was $1 million, as per current records**	**No**	**Yes**

Project	Start Date	Status	Comments	Compliant with Financial Controls	Substantially Aligned with Project Delivery Governance Standards
HST	**F2010**	**Closed**	• **Successful project outcomes delivered** • **ITDSP was not fully followed**	**Yes**	**No**
SAP Environment Upgrade	**F2011**	**Closed**	• **Successful project outcomes delivered** • **No record that ITDSP was followed**	**Yes**	**Not available**
SAP Financials - Reporting Enhancements F11/F12	**F2011**	**Closed**	• **Successful project outcomes delivered** • **Overspent for two months by up to $65,000 before EAR revision 1 approval, and overspent for 8 months by up to $25,000 before EAR revision 2 approval, but final costs do not exceed final authorized amount**	**No**	**Yes**
SAP Incident Management System	**F2011**	**Closed**	• **Successful project outcomes delivered** • **Overspent on completion by $70,000**	**No**	**Yes**
SAP Solution Manager Implementation	**F2011**	**Closed**	• **Successful project outcomes delivered** • **Overspent for four months by up to $80,000 before EAR revision approval, but final costs do not exceed the authorized amount**	**No**	**Yes**

Project	Start Date	Status	Comments	Compliant with Financial Controls	Substantially Aligned with Project Delivery Governance Standards
SAP CCS Address Management	**F2011**	**Closed**	• **No material issues** • **Project did not proceed to implementation due to competing business priorities**	**Yes**	**Yes**
LGS Rate Structure Change	**F2011**	**Closed**	• **Successful project outcomes delivered** • **ITDSP was not fully followed**	**Yes**	**No**
PSW	**F2011**	**Closed**	• **$3 million spent prior to first EAR approval** • **Preliminary business case – EAR was approved by the CIO for $4.5 million when approval limit was $3 million** • **EAR revision approved for $7.3 million but no updated business case attached** • **EAR revision approved for $10.5 million but no business case attached** • **Overspend of $4 million that was transferred to other projects. Refer to section 3.4.3** • **Steering Committee in place but ITDSP was not fully followed**	**No**	**No**

Project	Start Date	Status	Comments	Compliant with Financial Controls	Substantially Aligned with Project Delivery Governance Standards
Asset Management Foundational Technology	**F2011**	**Written Off**	• **Transformation Initiative technology project** • **$425,000 spent prior to EAR approval** • **Overspent for four months by up to $200,000 prior to EAR revision approval** • **Did not use standard BC Hydro technology project governance**	**No**	**No**
Supply Chain Management	**F2011**	**Deferred / Written Off**	• **Transformation Initiative technology project** • **Overspent for five months by up to $2.2 million, and overspent for eight months by up to $6 million** • **The work in progress was partially written off and deferred amounts will be applied to the Supply Chain Applications project** • **Did not use standard BC Hydro technology project governance**	**No**	**No**

Project	Start Date	Status	Comments	Compliant with Financial Controls	Substantially Aligned with Project Delivery Governance Standards
SAP FSR Changes to Distribution Outage Data Warehouse	**F2011**	**Closed**	• **Successful project outcomes delivered** • **No record of financial approvals (total project cost of $30,000)** • **No record of the project governance that was followed**	**No**	**Not available**
SAP Collections Module	**F2012**	**Closed**	• **Successful project outcomes delivered** • **ITDSP was not fully followed**	**Yes**	**No**
SAP NetWeaver Technical Enhancements	**F2012**	**Closed**	• **Successful project outcomes delivered** • **No material issues**	**Yes**	**Yes**
Data Masking for SAP and Portal	**F2012**	**Closed**	• **Project scope was delivered but the use of the solution is limited** • **Overspent for one month by up to $70,000 prior to EAR revision approval, but final costs do not exceed authorized amount**	**No**	**Yes**
SAP GRC 10.0 Implementation	**F2012**	**Closed**	• **Successful project outcomes delivered** • **No material issues**	**Yes**	**Yes**

Project	Start Date	Status	Comments	Compliant with Financial Controls	Substantially Aligned with Project Delivery Governance Standards
PowerTech Lab Financial System Migration	**F2012**	**Closed**	• **Successful project outcomes delivered** • **$320,000 spent prior to initial EAR approval, but final costs do not exceed authorized amount**	**Not available**	**Yes**
SAP Incident Management System (Environment)	**F2012**	**Closed**	• **Successful project outcomes delivered** • **Overspent at project close by $60,000**	**No**	**Yes**
Common Payroll Holdback	**F2012**	**Closed**	• **Successful project outcomes delivered** • **No material issues**	**Yes**	**Yes**
SAP Journal Voucher Upload Tool	**F2013**	**Closed**	• **Successful project outcomes delivered** • **Overspent for three months by up to $15,000 prior to EAR revision approval, but final costs do not exceed authorized amount** • **No record of the project governance that was followed**	**No**	**Not available**
SAP Financial Reporting Enhancements F13	**F2013**	**Closed**	• **Successful project outcomes delivered** • **Overspent for two months by up to $147,000 prior to EAR revision approval, but final costs do not exceed final authorized amount**	**No**	**Yes**

Project	Start Date	Status	Comments	Compliant with Financial Controls	Substantially Aligned with Project Delivery Governance Standards
Work Management Technical Readiness	**F2013**	**Closed**	• **Transformation Initiative technology project** • **Did not use standard BC Hydro technology project governance**	**Yes**	**No**
Work Management Foundational Technology	**F2013**	**Written Off**	• **Transformation Initiative technology project** • **$250,000 spent prior to EAR approval** • **Overspent for three months by up to $400,000 prior to EAR revision approval** • **Did not use standard BC Hydro technology project governance**	**No**	**No**
Customer Connections Foundation Technology	**F2013**	**Written Off**	• **Transformation Initiative technology project** • **$314,000 spent prior to EAR approval** • **Overspent for three months by up to $560,000 prior to EAR revision approval** • **Did not use standard BC Hydro technology project governance**	**No**	**No**

Project	Start Date	Status	Comments	Compliant with Financial Controls	Substantially Aligned with Project Delivery Governance Standards
Schedule Dispatch Mobility Foundational Technology	**F2013**	**Deferred / Written Off**	• **Transformation Initiative technology project** • **$472,000 spent prior to EAR approval** • **Overspent for three months by up to $1.1 million prior to EAR revision approval** • **Did not use standard BC Hydro technology project governance**	**No**	**No**
SAP Mobile & Handheld Device Management	**F2013**	**Closed**	• **Successful project outcomes delivered** • **$950,000 spent on license purchase one month before EAR revision approval**	**No**	**Yes**
PPM Enhancements F13	**F2013**	**Closed**	• **Successful project outcomes delivered** • **No material issues**	**Yes**	**Yes**
Learning Management System Replacement	**F2013**	**Closed**	• **Successful project outcomes delivered** • **Overspent for three months by up to $200,000 prior to EAR revision approval**	**No**	**Yes**
HCM F13 Enhancements	**F2013**	**Closed**	• **Successful project outcomes delivered** • **No material issues**	**Yes**	**Yes**
Net Metering SAP Billing Rate	**F2013**	**Closed**	• **Successful project outcomes delivered** • **No material issues**	**Yes**	**Yes**

Project	Start Date	Status	Comments	Compliant with Financial Controls	Substantially Aligned with Project Delivery Governance Standards
SAP Investigative Case Management	**F2013**	**Closed**	• **Successful project outcomes delivered** • **No material issues**	**Yes**	**Yes**
SAP Enhancements Pack 6 Upgrade	**F2014**	**Closed**	• **Successful project outcomes delivered** • **No material issues**	**Yes**	**Yes**
SAP Licensing F14	**F2014**	**Closed**	• **Successful project outcomes delivered** • **No material issues**	**Yes**	**Not applicable**
Worksoft Test Automation	**F2014**	**Closed**	• **Successful project outcomes delivered** • **No material issues**	**Yes**	**Yes**
PST Reinstatement	**F2014**	**Closed**	• **Successful project outcomes delivered** • **No material issues**	**Yes**	**Yes**
PeopleSoft Decommissioning	**F2014**	**Closed**	• **Successful project outcomes delivered** • **No material issues**	**Yes**	**Yes**
SAP Expense Workflow Enhancements	**F2014**	**Closed**	• **Successful project outcomes delivered** • **No material issues**	**Yes**	**Yes**
Human Capital Management Enhancements F14	**F2014**	**Closed**	• **Successful project outcomes delivered** • **No material issues**	**Yes**	**Yes**
Supply Chain Solutions - SAP	**F2014**	**Closed**	• **Successful project outcomes delivered** • **Overspent for three months by up to $350,000 prior to EAR revision approval**	**No**	**Yes**

Project	Start Date	Status	Comments	Compliant with Financial Controls	Substantially Aligned with Project Delivery Governance Standards
Supply Chain Solutions - SAP Meters	**F2014**	**Closed**	• **Successful project outcomes delivered** • **No material issues**	**Yes**	**Yes**
Mobile Application Infrastructure	**F2014**	**In-Service**	• **Successful project outcomes delivered** • **No material issues**	**Yes**	**Yes**
Credit Collections Enhancements F14	**F2014**	**Closed**	• **Successful project outcomes delivered** • **No material issues**	**Yes**	**Yes**
Distribution Work Scheduling	**F2014**	**In-Service**	• **Successful project outcomes delivered** • **Overspent for less than one month by up to $147,000 prior to EAR revision approval**	**No**	**Yes**
PPM Enhancements F14	**F2015**	**Closed**	• **Successful project outcomes delivered** • **No material issues**	**Yes**	**Yes**
PPM System Security Enhancements	**F2015**	**Closed**	• **Successful project outcomes delivered** • **No material issues**	**Yes**	**Yes**
SAP Enhancements Pack 7 Upgrade	**F2015**	**Closed**	• **Successful project outcomes delivered** • **No material issues**	**Yes**	**Yes**
SAP Finance Enhancements F15	**F2015**	**In-Service**	• **Successful project outcomes delivered** • **No material issues**	**Yes**	**Yes**
PPM Enhancements F15	**F2015**	**Closed**	• **Successful project outcomes delivered** • **No material issues**	**Yes**	**Yes**

Project	Start Date	Status	Comments	Compliant with Financial Controls	Substantially Aligned with Project Delivery Governance Standards
Human Capital Management Enhancements F15	**F2015**	**In-Service**	• **Successful project outcomes delivered** • **No material issues**	**Yes**	**Yes**
QLMS Enhancements Work Program - F15/F16	**F2015**	**In-Service**	• **Successful project outcomes delivered** • **No material issues**	**Yes**	**Yes**
SAP CCS Enhancements F15	**F2015**	**Closed**	• **Successful project outcomes delivered** • **No material issues** • **Overspent by $8,000 on completion - within administrative threshold of project completion report**	**Yes**	**Yes**
eRecruitment Enhancements Work Program F15	**F2015**	**In-Service**	• **Successful project outcomes delivered** • **No material issues**	**Yes**	**Yes**
Meter Testing Consolidation	**F2015**	**In-Service**	• **Successful project outcomes delivered** • **No material issues**	**Yes**	**Yes**
Financial Reporting Enhancements F15/F16	**F2015**	**In Progress**	• **No material issues**	**Yes**	**Yes**
SAP Security Access Retrofit	**F2015**	**In Progress**	• **No material issues**	**Yes**	**Yes**
Supply Chain Applications	**F2015**	**In Progress**	• **No material issues**	**Yes**	**Yes**

Project	Start Date	Status	Comments	Compliant with Financial Controls	Substantially Aligned with Project Delivery Governance Standards
F16 SAP Upgrade	**F2016**	**In-Service**	• **Successful project outcomes delivered** • **No material issues**	**Yes**	**Yes**
Payroll Audit & Compliance Tool	**F2016**	**In-Service**	• **Successful project outcomes delivered** • **No material issues** • **Overspent by $6,000 on completion - within administrative threshold of project completion report**	**Yes**	**Yes**
HR Enhancements F16	**F2016**	**In Progress**	• **No material issues**	**Yes**	**Yes**
SAP Finance Enhancements F16 Work Program	**F2016**	**In Progress**	• **No material issues**	**Yes**	**Yes**
Ariba eCommerce Expansion F16	**F2016**	**In Progress**	• **No material issues**	**Yes**	**Yes**
Analysis for Office	**F2016**	**In Progress**	• **No material issues**	**Yes**	**Yes**
PPM Enhancements F16	**F2016**	**In Progress**	• **No material issues**	**Yes**	**Yes**
MDG Enhancements Work Program F16	**F2016**	**In Progress**	• **No material issues**	**Yes**	**Yes**

Project	Start Date	Status	Comments	Compliant with Financial Controls	Substantially Aligned with Project Delivery Governance Standards
SAP CCS Enhancements Work Program F16	**F2016**	**In Progress**	• **No material issues**	**Yes**	**Yes**
SAP Environmental Health & Safety Management Upgrade - F16	**F2016**	**In Progress**	• **No material issues**	**Yes**	**Yes**

Project	Start Date	Status	Comments	Compliant with Financial Controls	Substantially Aligned with Project Delivery Governance Standards
Enterprise Billing Infrastructure (formerly: Customer Billing)	**F2016**	**In Progress**	• **In February 2016 the project reported costs that exceeded the approved Identification EAR amount by $218,000 due to an erroneous accrual. There was a payment and accrual of $240,000 for the same item both in February. The accrual was corrected in March 2016. Had the error been reversed in February there would have been a small underspend.** • **Executive Team approval for continuation of the project was provided on March 8, 2016, subject to a follow-up meeting with the CFO regarding the NPV analysis. The NPV review with the CFO was completed on March 15. While verbal approval was received, the EAR was not ready to be signed as several dates were now misaligned due to the lengthy presentation and approval process. The EAR was updated to reflect the correct dates and was signed on April 13, 2016.**	**No**	**Yes**

Project	Start Date	Status	Comments	Compliant with Financial Controls	Substantially Aligned with Project Delivery Governance Standards
DWS Enhancement Work Program	**F2016**	**In Progress**	• **No material issues**	**Yes**	**Yes**

23.0 C. BC HYDRO APPROVAL AND OVERSIGHT CONTROLS AND PROCESSES

Reference: FINANCIAL OVERSIGHT AND PROJECT DELIVERY GOVERNANCE
Exhibit B-3, Section 4.6, Table 9, pp. 34, 44-50
Financial oversight and project delivery governance for SAP-related projects

BC Hydro states the following on page 44 of the Consolidated Information Filing: "For the purpose of Table 9, the summary comment on governance that "Successful project outcomes delivered" means that a solution was implemented with little downtime to the organization and is in productive use, functioning largely as expected."

1.23.2 Please identify the projects in Table 9 which fully complied with all of BC Hydro's financial oversight and project delivery governance policies.

RESPONSE:

The projects that fully complied with both BC Hydro's financial controls and project delivery governance standards are the 41 projects in Table 9A (in BC Hydro's response to BCUC IR 1.23.1.1) for which a "Yes" is indicated for both "Compliant with Financial Controls" and "Substantially Aligned with Project Delivery Governance Standards".

23.0 C. BC HYDRO APPROVAL AND OVERSIGHT CONTROLS AND PROCESSES

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1.23.3 For each project listed in Table 9 where the summary comment on governance indicates "Successful project outcomes delivered", please explain what other measures of success were used in addition to "the solution was implemented with little downtime to the organization and is in productive use, functioning largely as expected".

RESPONSE:

In addition to the noted criteria, BC Hydro made a determination, through the expert judgement of Technology group project managers and other subject matter experts, of the degree to which the envisioned project scope was delivered.

23.0 C. BC HYDRO APPROVAL AND OVERSIGHT CONTROLS AND PROCESSES

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1.23.3 For each project listed in Table 9 where the summary comment on governance indicates "Successful project outcomes delivered", please explain what other measures of success were used in addition to "the solution was implemented with little downtime to the organization and is in productive use, functioning largely as expected".

1.23.3.1 Are business benefits tracked?

RESPONSE:

Please refer to BC Hydro's response to BCUC IR 1.13.3 with regard to how benefits are incorporated into a Business Case, and BC Hydro's response to BCUC IR 1.15.13, which confirms that a benefits realization management framework is not currently in place at BC Hydro with respect to IT Projects. BC Hydro intends to implement a benefit realization process by March 31, 2018. Please refer to Attachments 23 and 24 of the Consolidated Information Filing for the related audit reports, including management response.

BC Hydro did not formally analyze benefits realization when developing Table 9 and identifying 'successful project outcomes delivered'.

23.0 C. BC HYDRO APPROVAL AND OVERSIGHT CONTROLS AND PROCESSES

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BC Hydro states the following on page 44 of the Consolidated Information Filing: "For the purpose of Table 9, the summary comment on governance that "Successful project outcomes delivered" means that a solution was implemented with little downtime to the organization and is in productive use, functioning largely as expected."

1.23.3 For each project listed in Table 9 where the summary comment on governance indicates "Successful project outcomes delivered", please explain what other measures of success were used in addition to "the solution was implemented with little downtime to the organization and is in productive use, functioning largely as expected".

1.23.3.2 Are there instances when a solution was implemented with minimal downtime and is functioning as expected, but did not achieve the expected business outcomes? In these cases, would a project still be deemed "successful"? Please explain and include a discussion of how these situations would be tracked and reported on.

RESPONSE:

There are no instances when a solution was implemented with minimal downtime and is functioning as expected, but did not achieve the expected business outcomes.

BC Hydro considers a project that did *not* generally achieve the expected business outcomes is one that is either not in productive use or not functioning largely as expected. Accordingly, if such projects existed, they would not be identified as having "Successful project outcomes delivered".

Further, BC Hydro notes that of the closed projects noted in Table 9, there are four projects that are not identified as having "Successful project outcomes delivered." In particular, the SAP CCS Address Management project did not proceed to implementation and therefore was not successful. The PSW project and the Work Management Technical Readiness projects did not deliver all their envisioned scope and their solutions were not functioning as expected upon their completion. The Data Masking for SAP and Portal solution is in more limited use than expected.

23.0 C. BC HYDRO APPROVAL AND OVERSIGHT CONTROLS AND PROCESSES

Reference: FINANCIAL OVERSIGHT AND PROJECT DELIVERY GOVERNANCE
Exhibit B-3, Section 4.6, Table 9, pp. 34, 44-50
Financial oversight and project delivery governance for SAP-related projects

BC Hydro states the following on page 44 of the Consolidated Information Filing: "For the purpose of Table 9, the summary comment on governance that "Successful project outcomes delivered" means that a solution was implemented with little downtime to the organization and is in productive use, functioning largely as expected."

1.23.4 With regards to the projects listed in Table 9 which do not contain the comment "Successful project outcomes delivered", please explain why, and specifically indicate for each project whether the reason(s) was/were due to (i) the project resulting in downtime to the organization, (ii) the project not being in productive use, and/or (iii) the project not functioning largely as expected.

RESPONSE:

Please refer to BC Hydro's response to BCUC IR 1.23.3.2.

23.0 C. BC HYDRO APPROVAL AND OVERSIGHT CONTROLS AND PROCESSES

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BC Hydro states the following on page 44 of the Consolidated Information Filing: "For the purpose of Table 9, the summary comment on governance that "Successful project outcomes delivered" means that a solution was implemented with little downtime to the organization and is in productive use, functioning largely as expected."

1.23.5 For each project in Table 9 that overspent prior to an EAR/EAR Revision approval, did the project budgets change with every approved EAR Revision? Please explain.

RESPONSE:

Yes. Please refer to BC Hydro's response to BCUC IR 1.17.7, which describes the situations that would result in an EAR revision. Also, please refer to BC Hydro's response to DIX IR 1.16.0, which provides each project Business Case and EAR, and the respective revisions as they may apply.

23.0 C. BC HYDRO APPROVAL AND OVERSIGHT CONTROLS AND PROCESSES

Reference: FINANCIAL OVERSIGHT AND PROJECT DELIVERY GOVERNANCE
Exhibit B-3, Section 4.6, Table 9, pp. 34, 44-50
Financial oversight and project delivery governance for SAP-related projects

BC Hydro states the following on page 34 of the Consolidated Information Filing: "BC Hydro's MAPP 1.2.1.B.3 EAR describes the purpose and function of an EAR, which is a control document used for obtaining authorization for initiative expenditures and commitments exceeding $100,000."

1.23.6 Given the above excerpt's statement that an EAR is a "control document" for "obtaining authorization for initiative expenditures", please clarify the statements made in Table 9 which appear to demonstrate that expenditures precede the EAR and approval.

RESPONSE:

The following discussion further clarifies the situations that may result in expenditures preceding an approved EAR or EAR revision:

- **Project or initiative related expenditures may be incurred prior to EAR approval using operating funds approved through the annual planning process e.g., Enterprise Billing Infrastructure Project, Powertech Lab Financial System Migration.**

  The annual planning process drives the allocation of operating funds at the Key Business Unit (KBU) level, and may include the approval of both base and initiative related operating costs. Operational management may approve expenditures for the initiation phase of a project using the approved budget, and later transfer the costs associated with a project to the approved EAR for the purpose of centralized control and management. If the project does not proceed or if an EAR is not approved, the costs would be covered by the Project Initiator's KBU operating budget.

- **Project work may be authorized and may then begin to incur expenditures while an EAR is being finalized, out of compliance with policy.**

- **In addition, although not directly related to the projects listed in Table 9, expenditures may precede EAR approval in cases that have an immediate impact to safety or security of people or plant, or in cases where there may be a significant impact to business operations. In this situation, the approval must be documented and approved by the appropriate level of management in compliance with FAAP.**

23.0 C. BC HYDRO APPROVAL AND OVERSIGHT CONTROLS AND PROCESSES

Reference: FINANCIAL OVERSIGHT AND PROJECT DELIVERY GOVERNANCE
Exhibit B-3, Section 4.6, Table 9, pp. 34, 44-50
Financial oversight and project delivery governance for SAP-related projects

BC Hydro states the following on page 34 of the Consolidated Information Filing: "BC Hydro's MAPP 1.2.1.B.3 EAR describes the purpose and function of an EAR, which is a control document used for obtaining authorization for initiative expenditures and commitments exceeding $100,000."

1.23.7 What is the escalation process when a project is at risk of over-spending? What actions are taken when risks are escalated? Are there policies and guidelines that cover this? Please explain.

RESPONSE:

When a project is at risk of overspending, consideration will be given to changing the project scope, plan or delivery approach to support completing the project within the authorized amount. In cases where it is not possible or advisable to adjust delivery of the project, an EAR revision to request approval of additional expenditures is required.

An EAR revision is required: (1) when a project is expected to exceed the authorized level of expenditures, (2) when a material change to project scope is expected, or (3) when a project is making a draw on the assigned Project Reserve. An EAR revision must be approved prior to such event occurring. MAPP 1.2.1B.4, Attachment 16 to the Consolidated Information Filing, sets out the requirements for an EAR Revision.

The requirement for the identification of project and business risks is documented in MAPP 4.1.1B.1 Business Case Requirements. The roles and responsibilities for managing IT project risks is documented in Attachment 18 of the Consolidated Information Filing.

Please refer to BC Hydro's responses to BCUC IR 1.21.4 for more details on the risks and issues escalation framework/process available to Project Managers during the lifecycle of the project.

23.0 C. BC HYDRO APPROVAL AND OVERSIGHT CONTROLS AND PROCESSES

Reference: FINANCIAL OVERSIGHT AND PROJECT DELIVERY GOVERNANCE
Exhibit B-3, Section 4.6, Table 9, pp. 34, 44-50
Financial oversight and project delivery governance for SAP-related projects

BC Hydro states the following on page 34 of the Consolidated Information Filing: "BC Hydro's MAPP 1.2.1.B.3 EAR describes the purpose and function of an EAR, which is a control document used for obtaining authorization for initiative expenditures and commitments exceeding $100,000."

1.23.8 What forms of authorization or approval take place to permit projects to incur expenditures prior to an EAR approval? Are there instances where expenditures are incurred in advance of an EAR being approved and the EAR is ultimately denied? If yes, who is accountable for expenditures where EARs are not approved?

RESPONSE:

Please refer to BC Hydro's response to BCUC IR 1.23.6.

In addition, BC Hydro does not track the instances where expenditures are incurred in advance of an EAR and the EAR is ultimately denied. However, as indicated in the above referenced response, if this were to occur, the costs would be covered by the operating budget of the initiating business unit.

23.0 C. BC HYDRO APPROVAL AND OVERSIGHT CONTROLS AND PROCESSES

Reference: FINANCIAL OVERSIGHT AND PROJECT DELIVERY GOVERNANCE
Exhibit B-3, Section 4.6, Table 9, pp. 34, 44-50
Financial oversight and project delivery governance for SAP-related projects

BC Hydro states the following on page 34 of the Consolidated Information Filing: "BC Hydro's MAPP 1.2.1.B.3 EAR describes the purpose and function of an EAR, which is a control document used for obtaining authorization for initiative expenditures and commitments exceeding $100,000."

1.23.9 What conditions must be met and/or exceptions exist where a project need not adhere to BC Hydro's Technology Project Governance or the ITDSP? Who can authorize non-compliance to BC Hydro standards?

RESPONSE:

Proposals for exemptions from adherence to ITDSP may be considered in rare instances after a strong case is made and documented and with the agreement of the Technology Project Management Office (PMO). This is noted in BC Hydro's ITDSP and Tailoring Guidelines (Consolidated Information Filing, Attachment 19, section 2.2) as follows:

The ITDSP framework is applicable to all BC Hydro Information Technology projects, with the applicable Variant tailored as appropriate to the project specifics, with the agreement of the Technology Project Management Office (PMO).

The ITDSP framework excludes from its scope any of the following:

- ***Activities that are not projects, e.g. minor enhancements / sustainment work requests, or work programs.***
- ***Any projects which the Technology PMO agrees specifically can "vary" from the ITDSP framework (e.g., for projects that may follow a defined PPM[i] Variant, such as Generation, Transmission and Distribution Standard Variants).***

Note: Proposals for exemptions may be considered in rare instances after a strong case is made and documented. However, the intention with the ITDSP framework is to have a well laid out, clear and adaptable path to accommodate the specific needs of an individual project. This is to save PMs and Service Providers time that would otherwise be required to justify the exemption. All exemption requests must be logged by the PM in the Technology Exemptions Database.

[i] PPM Variants are the project management frameworks used for engineering and construction projects.

23.0 C. BC HYDRO APPROVAL AND OVERSIGHT CONTROLS AND PROCESSES

Reference: FINANCIAL OVERSIGHT AND PROJECT DELIVERY GOVERNANCE
Exhibit B-3, Section 4.6, Table 9, pp. 34, 44-50
Financial oversight and project delivery governance for SAP-related projects

BC Hydro states the following on page 34 of the Consolidated Information Filing: "BC Hydro's MAPP 1.2.1.B.3 EAR describes the purpose and function of an EAR, which is a control document used for obtaining authorization for initiative expenditures and commitments exceeding $100,000."

1.23.10 Are there any SAP-related projects that have not been recorded in Table 9? If yes, please add these projects and explain why they were not originally included in Table 9.

RESPONSE:

Table 9 does not include SAP-related projects prior to F2009. Please refer to BC Hydro's response to BCUC 1.6.5.

For the period F2009-F2016 there are no SAP-related projects that have not been recorded in Table 9. Please also refer to BC Hydro's response to BCOAPO IR 1.13.1.

24.0 D. IT&T FIVE-YEAR PLAN GOALS RELATED TO SAP INITIATIVES

Reference: SAP AS THE DEFAULT ERP SOLUTION (2008-2009)
Exhibit B-3: Section 2.2, p. 12; Attachment 10; Exhibit A2-2, Appendix 2, p. 3
IT&T five-year plan

BC Hydro states on page 12 of the Consolidated Information Filing: "From mid-2008 to spring 2009 BC Hydro's IT&T strategy continued to be under development and in November 2009, BC Hydro finalized its IT&T Five-Year Plan."

Attachment 10 of the Consolidated Information Filing contains the "BC Hydro Information Technology & Telecommunications Five Year Plan – Year 2" dated November 18, 2009, which was originally filed as Appendix N to BC Hydro's F2011 RRA.

In BC Hydro's January 8, 2016 response to the Adrian Dix complaint, filed as Exhibit A2-2, BC Hydro provides in Appendix 2 a "Summary Description of the 2009/10 RRA Filed in February 2008 in Relation to IT Capital". On page 3 of Appendix 2, BC Hydro states the following:

In response to one of the IT&T-related Information Requests asked of BC Hydro and noted above (Commission Information Request 1.71.2.2) BC Hydro stated that it would file its IT&T Strategy in its Evidentiary Update…

…BC Hydro did not do so and provided no reason for that failure in the Evidentiary Update.

1.24.1 Please provide the original IT&T Five-Year Plan which was finalized in November 2009.

RESPONSE:

Attachment 10 of the Consolidated Information Filing is the IT&T strategic plan that was finalized in November 2009. The plan at Attachment 10 is the first finalized and approved IT&T strategic plan since 2006.

Please refer to BC Hydro's response to DIX IR 1.1.0 for additional information on prior drafts of the plan and for additional information on IT&T strategic planning.

24.0 D. IT&T FIVE-YEAR PLAN GOALS RELATED TO SAP INITIATIVES

Reference: SAP AS THE DEFAULT ERP SOLUTION (2008-2009)
Exhibit B-3: Section 2.2, p. 12; Attachment 10; Exhibit A2-2, Appendix 2, p. 3
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BC Hydro states on page 12 of the Consolidated Information Filing: "From mid-2008 to spring 2009 BC Hydro's IT&T strategy continued to be under development and in November 2009, BC Hydro finalized its IT&T Five-Year Plan."

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In response to one of the IT&T-related Information Requests asked of BC Hydro and noted above (Commission Information Request 1.71.2.2) BC Hydro stated that it would file its IT&T Strategy in its Evidentiary Update…

…BC Hydro did not do so and provided no reason for that failure in the Evidentiary Update.

1.24.2 Please explain the process to finalize the IT&T Five-Year Plan, including the required levels of approval within BC Hydro.

RESPONSE:

IT&T strategy falls within the operational responsibility of management, under the general oversight of the Customer Service, Operations & Planning Committee (formerly the ARMC and AFC) of the Board. The Board committee is not expected to approve management's IT&T strategic plan. Please refer to BC Hydro's response to BCUC IR 1.2.12 for the ARMC's 2008 term of reference related to IT strategy.

Historically, the Chief Information Officer, VP of Technology or equivalent was responsible for developing IT&T strategy with input from senior managers

throughout BC Hydro as appropriate, and subject to direction and approval by the executive team. These plans were developed and approved on an as-needed basis as opposed to relying on a standardized process or schedule. Accordingly, there were no policy or governance documents applicable to IT&T strategic planning. The IT&T strategy document titled "BC Hydro Information Technology & Telecommunication Five-Year Plan – Year 2" was approved by the executive team, though there is no formal record of this approval.

Presently, the Five-Year Technology Strategic Plan is approved annually by the executive team in accordance with the 'Executive Team Mandate for the Review and Approval of Technology Initiatives', which is Attachment 22 to BC Hydro's response to BCUC IR 1.15.6.

24.0 D. IT&T FIVE-YEAR PLAN GOALS RELATED TO SAP INITIATIVES

Reference: SAP AS THE DEFAULT ERP SOLUTION (2008-2009)
Exhibit B-3: Section 2.2, p. 12; Attachment 10; Exhibit A2-2, Appendix 2, p. 3
IT&T five-year plan

BC Hydro states on page 12 of the Consolidated Information Filing: "From mid-2008 to spring 2009 BC Hydro's IT&T strategy continued to be under development and in November 2009, BC Hydro finalized its IT&T Five-Year Plan."

Attachment 10 of the Consolidated Information Filing contains the "BC Hydro Information Technology & Telecommunications Five Year Plan – Year 2" dated November 18, 2009, which was originally filed as Appendix N to BC Hydro's F2011 RRA.

In BC Hydro's January 8, 2016 response to the Adrian Dix complaint, filed as Exhibit A2-2, BC Hydro provides in Appendix 2 a "Summary Description of the 2009/10 RRA Filed in February 2008 in Relation to IT Capital". On page 3 of Appendix 2, BC Hydro states the following:

In response to one of the IT&T-related Information Requests asked of BC Hydro and noted above (Commission Information Request 1.71.2.2) BC Hydro stated that it would file its IT&T Strategy in its Evidentiary Update…

…BC Hydro did not do so and provided no reason for that failure in the Evidentiary Update.

1.24.3 Was the finalized IT&T Five-Year Plan presented to BC Hydro's Board of Directors?

RESPONSE:

The finalized BC Hydro Information Technology & Telecommunications Five Year Plan – Year 2 (IT&T Plan) was not presented to BC Hydro's Board of Directors.

Plans of this nature fall within the operational responsibility of management, under the general oversight of the ARMC, and do not require Board approval or review. Please refer to BC Hydro's response to BCUC IR 1.2.12, which sets out the applicable term of reference for the ARMC.

There was a tutorial session on this plan requested by the ARMC and attended by four Board members in January 2010, as described further below.

- **The ARMC was provided an overview of a planned workshop on the 'BC Hydro Information Technology & Telecommunications Five Year Plan – Year 2' in October 2009 (Attachment 12 to BC Hydro's response to Mr. Dix's IR 1.9.0);**

- **An initial session was held for four Board members in January 2010 (refer to the IT&T update tabled at the March 2010 ARMC meeting at Attachment 14 to BC Hydro's response to DIX IR 1.9.0). This report to the ARMC noted that a "subsequent session was being planned for March".**

- **The May 2010 tabled report to the ARMC (Attachment 16 to BC Hydro's response to DIX IR 1.9.0) noted that a "subsequent session was being planned for May", but no record is made of whether the March session occurred.**

- **The September 2010 tabled report to the ARMC (Attachment 18 to BC Hydro's response to DIX IR 1.9.0) noted that the IT&T plan was currently being updated as a mid-year activity, and no record is made of whether the May session occurred.**

For information on Board Committee meetings where IT&T reports were tabled and/or IT&T initiatives and plans were discussed at regular intervals as updates occurred, please refer to BC Hydro's response to DIX IR 1.9.0. For example, and more recently:

- **An update provided to the AFC in September 2014 highlighting that a key milestone, approval of the five-year Technology plan, was accomplished under the oversight of the Technology Governance Committee, at Attachment 50 to that response; and**

- **An update provided to the CSOPC in May 2016 that the 5-Year Technology Strategic Plan for F17-F21 has been approved by the Executive Team, at Attachment 63 to that response. (Please refer to BC Hydro's response to DIX IR 1.10.0, Attachment 36, for a copy of the Technology Group Five-Year Strategic Plan, F17-F21 as provided for the Executive Team Meeting held on March 8, 2016.)**

24.0 D. IT&T FIVE-YEAR PLAN GOALS RELATED TO SAP INITIATIVES

Reference: SAP AS THE DEFAULT ERP SOLUTION (2008-2009)
Exhibit B-3: Section 2.2, p. 12; Attachment 10; Exhibit A2-2, Appendix 2, p. 3
IT&T five-year plan

BC Hydro states on page 12 of the Consolidated Information Filing: "From mid-2008 to spring 2009 BC Hydro's IT&T strategy continued to be under development and in November 2009, BC Hydro finalized its IT&T Five-Year Plan."

Attachment 10 of the Consolidated Information Filing contains the "BC Hydro Information Technology & Telecommunications Five Year Plan – Year 2" dated November 18, 2009, which was originally filed as Appendix N to BC Hydro's F2011 RRA.

In BC Hydro's January 8, 2016 response to the Adrian Dix complaint, filed as Exhibit A2-2, BC Hydro provides in Appendix 2 a "Summary Description of the 2009/10 RRA Filed in February 2008 in Relation to IT Capital". On page 3 of Appendix 2, BC Hydro states the following:

In response to one of the IT&T-related Information Requests asked of BC Hydro and noted above (Commission Information Request 1.71.2.2) BC Hydro stated that it would file its IT&T Strategy in its Evidentiary Update…

…BC Hydro did not do so and provided no reason for that failure in the Evidentiary Update.

1.24.3 Was the finalized IT&T Five-Year Plan presented to BC Hydro's Board of Directors?

1.24.3.1 If yes, please provide the minutes of the Board of Directors' meeting where this presentation occurred and indicate whether the Board approved the IT&T Five-Year Plan.

RESPONSE:

Please refer to BC Hydro's response to BCUC IR 1.24.3.

24.0 D. IT&T FIVE-YEAR PLAN GOALS RELATED TO SAP INITIATIVES

Reference: SAP AS THE DEFAULT ERP SOLUTION (2008-2009)
Exhibit B-3: Section 2.2, p. 12; Attachment 10; Exhibit A2-2, Appendix 2, p. 3
IT&T five-year plan

BC Hydro states on page 12 of the Consolidated Information Filing: "From mid-2008 to spring 2009 BC Hydro's IT&T strategy continued to be under development and in November 2009, BC Hydro finalized its IT&T Five-Year Plan."

Attachment 10 of the Consolidated Information Filing contains the "BC Hydro Information Technology & Telecommunications Five Year Plan – Year 2" dated November 18, 2009, which was originally filed as Appendix N to BC Hydro's F2011 RRA.

In BC Hydro's January 8, 2016 response to the Adrian Dix complaint, filed as Exhibit A2-2, BC Hydro provides in Appendix 2 a "Summary Description of the 2009/10 RRA Filed in February 2008 in Relation to IT Capital". On page 3 of Appendix 2, BC Hydro states the following:

In response to one of the IT&T-related Information Requests asked of BC Hydro and noted above (Commission Information Request 1.71.2.2) BC Hydro stated that it would file its IT&T Strategy in its Evidentiary Update…

…BC Hydro did not do so and provided no reason for that failure in the Evidentiary Update.

1.24.3 Was the finalized IT&T Five-Year Plan presented to BC Hydro's Board of Directors?

1.24.3.2 If no, please explain why not.

RESPONSE:

Please refer to BC Hydro's response to BCUC IR 1.24.3.

25.0 D. IT&T FIVE-YEAR PLAN GOALS RELATED TO SAP INITIATIVES

Reference: IT&T PLAN GOAL – SAP AS THE CORE
Exhibit B-3, Section 5.1.1, Figure 2, pp. 52-55
Simplified integrated applications with SAP as the core – Goal 2

BC Hydro states on pages 52-53 of the Consolidated Information Filing:

The simplification referred to in this goal assumes that implementing business capabilities and processes in fewer or one integrated system will (a) allow disparate systems to be decommissioned, resulting in reduced operating costs, and (b) enable BC Hydro to implement improved business processes due to the integrated nature of ERP software.

On page 6 BC Hydro states that by 2008 it had implemented the following ERP systems: PeopleSoft, PassPort, SAP, JD Edwards, and Oracle Suite.

Table 2 on page 18 shows the status of the "PeopleSoft Decommissioning" project as "closed" for a total cost of $347,000.

BC Hydro states on page 58 that to date it has fully eliminated major applications such as PeopleSoft Financials, PeopleSoft HR, JD Edwards, BC Transmission Corporation's Oracle system, as well as many other customer systems.

1.25.1 Please clarify if BC Hydro has fully decommissioned the following ERP systems which it listed on page 6 as being in place up to 2008: PeopleSoft, JD Edwards, and Oracle.

RESPONSE:

Yes, PeopleSoft (both Financials and HR), JD Edwards and Oracle have been decommissioned.

25.0 D. IT&T FIVE-YEAR PLAN GOALS RELATED TO SAP INITIATIVES

Reference: IT&T PLAN GOAL – SAP AS THE CORE
Exhibit B-3, Section 5.1.1, Figure 2, pp. 52-55
Simplified integrated applications with SAP as the core – Goal 2

BC Hydro states on pages 52-53 of the Consolidated Information Filing:

The simplification referred to in this goal assumes that implementing business capabilities and processes in fewer or one integrated system will (a) allow disparate systems to be decommissioned, resulting in reduced operating costs, and (b) enable BC Hydro to implement improved business processes due to the integrated nature of ERP software.

On page 6 BC Hydro states that by 2008 it had implemented the following ERP systems: PeopleSoft, PassPort, SAP, JD Edwards, and Oracle Suite.

Table 2 on page 18 shows the status of the "PeopleSoft Decommissioning" project as "closed" for a total cost of $347,000.

BC Hydro states on page 58 that to date it has fully eliminated major applications such as PeopleSoft Financials, PeopleSoft HR, JD Edwards, BC Transmission Corporation's Oracle system, as well as many other customer systems.

1.25.2 If BC Hydro has decommissioned JD Edwards and Oracle, please explain why the decommissioning costs were not listed in Table 2 of the Consolidated Information Filing.

RESPONSE:

The decommissioning of JD Edwards was not SAP-related and the associated costs are not included in the total expenditures reported in Table 2 of the Consolidated Information Filing. The JD Edwards decommissioning project was not SAP-related because the JD Edwards functions were migrated to PeopleSoft.

The decommissioning costs associated with the BCTC Oracle system were not material and managed as part of the overall BCTC Integration project; hence the costs are not reported in Table 2 which lists projects that are specific to SAP-related initiatives.

25.0 D. IT&T FIVE-YEAR PLAN GOALS RELATED TO SAP INITIATIVES

Reference: IT&T PLAN GOAL – SAP AS THE CORE
Exhibit B-3, Section 5.1.1, Figure 2, pp. 52-55
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BC Hydro states on pages 52-53 of the Consolidated Information Filing:

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BC Hydro states on page 58 that to date it has fully eliminated major applications such as PeopleSoft Financials, PeopleSoft HR, JD Edwards, BC Transmission Corporation's Oracle system, as well as many other customer systems.

1.25.3 With regards to the implementation of the Enterprise Financials Upgrade project, PPM and EMPower, please indicate whether each of these projects were initiated in response to the expected obsolescence of the existing systems/applications, or if the projects were initiated at a time when the existing applications still had useful lives.

RESPONSE:

The Enterprise Financials Upgrade project and the EMPower project were initiated in response to the expected obsolescence of the existing PeopleSoft Financials and PeopleSoft HR systems, respectively.

The PPM project was initiated in response to business pressures to manage a growing capital program, not specifically in response to the expected obsolescence of the existing InfoPM system. However, InfoPM was nearing end of life and was not extendable to handle the full requirements of PPM.

25.0 D. IT&T FIVE-YEAR PLAN GOALS RELATED TO SAP INITIATIVES

Reference: IT&T PLAN GOAL – SAP AS THE CORE
Exhibit B-3, Section 5.1.1, Figure 2, pp. 52-55
Simplified integrated applications with SAP as the core – Goal 2

BC Hydro states on pages 52-53 of the Consolidated Information Filing:

The simplification referred to in this goal assumes that implementing business capabilities and processes in fewer or one integrated system will (a) allow disparate systems to be decommissioned, resulting in reduced operating costs, and (b) enable BC Hydro to implement improved business processes due to the integrated nature of ERP software.

On page 6 BC Hydro states that by 2008 it had implemented the following ERP systems: PeopleSoft, PassPort, SAP, JD Edwards, and Oracle Suite.

Table 2 on page 18 shows the status of the "PeopleSoft Decommissioning" project as "closed" for a total cost of $347,000.

BC Hydro states on page 58 that to date it has fully eliminated major applications such as PeopleSoft Financials, PeopleSoft HR, JD Edwards, BC Transmission Corporation's Oracle system, as well as many other customer systems.

1.25.3 With regards to the implementation of the Enterprise Financials Upgrade project, PPM and EMPower, please indicate whether each of these projects were initiated in response to the expected obsolescence of the existing systems/applications, or if the projects were initiated at a time when the existing applications still had useful lives.

1.25.3.1 For each of the major applications described by BC Hydro on page 58 as being fully eliminated, please indicate whether these applications were at the end of their useful lives. Please also provide the net book value of each of these applications at the time of elimination.

RESPONSE:

The PeopleSoft and JD Edwards applications were at the end of their useful life, with no remaining net book value at the time the decommissioning projects were completed.

The BCTC Oracle application is retained for reference in "read only" mode and is no longer maintained. The remaining net book value of the BCTC Oracle assets as at March of 2016 is $0.5 million.

26.0 D. IT&T FIVE-YEAR PLAN GOALS RELATED TO SAP INITIATIVES

Reference: IT&T PLAN GOALS
Exhibit B-3, Section 5.1, p. 54
IT&T plan goals, target and applicability of the goals to the SAP strategy

BC Hydro refers on page 54 of the Consolidated Information Filing to major "business-facing" SAP projects.

1.26.1 Please define the term "business-facing" in reference to SAP projects.

RESPONSE:

In reference to SAP projects, business-facing projects are those in which business users directly interact with the system or software being implemented, and where one of the primary objectives of the project is to provide new or improved software tools and functionality for end users.

26.0 D. IT&T FIVE-YEAR PLAN GOALS RELATED TO SAP INITIATIVES

Reference: IT&T PLAN GOALS
Exhibit B-3, Section 5.1, p. 54
IT&T plan goals, target and applicability of the goals to the SAP strategy

BC Hydro refers on page 54 of the Consolidated Information Filing to major "business-facing" SAP projects.

1.26.2 Please clarify, with reference to Table 2 of the Consolidated Information Filing, which projects in that table are not considered "business-facing" and why.

RESPONSE:

Project #41, PeopleSoft Decommissioning and all Platform category projects listed in Table 2 of the Consolidated Information Filing are considered non-business-facing, with the exception of Project #3, SAP Mobile & Handheld Device Management, which had business-facing and non-business-facing elements.

The Platform category projects are considered non-business-facing because their primary objective was not to implement new software or functionality for business users. Rather, these projects either (a) upgraded software and functionality behind the scenes in order to improve performance and/or stability of SAP components (e.g., Enhancement Pack Upgrades, etc.), (b) implemented SAP software in support of the sustainment team (e.g. SAP Solution Manager and Data Masking, etc.), or (c) provided funding for license purchases.

26.0 D. IT&T FIVE-YEAR PLAN GOALS RELATED TO SAP INITIATIVES

Reference: IT&T PLAN GOALS
Exhibit B-3, Section 5.1, p. 54
IT&T plan goals, target and applicability of the goals to the SAP strategy

BC Hydro refers on page 54 of the Consolidated Information Filing to major "business-facing" SAP projects.

1.26.3 Please revise Figure 2 on page 55 to include all business-facing and non-business-facing SAP projects greater than $1 million.

RESPONSE:

Fiscal Year		Major Business Facing and Non-Business Facing SAP-related Projects – In-service Timeline	Functional Area Supported/Module Implemented
F2010			
	<	Common Infrastructure	Platform
	<	F10 SAP Infrastructure	Platform
F2011			
	<	Financial Systems Replacement	Finance
	<	Project and Portfolio Management	Projects
	<	LGS Rate Structure Change	Customer
F2012			
	<	Incident Management System (Safety & Environment)	Human Resources
	<	EmPower (HR system replacement)	
	<	Plan and Schedule Work	Work Management (partial)
	<	Financials Reporting Enhancements F11/F12	Finance
F2013			
	<	Work Management Technical Readiness	Work Management (partial)
	<	Mobile & Handheld Device Management	Platform
	<	Smart Metering and Infrastructure	Customer
	<	Enterprise Licenses	Platform
	<	NetWeaver Technical Enhancements	Platform
F2014			
	<	Learning Management System Replacement	Human Resources
	<	Investigative Case Management System	Customer
	<	Financials Reporting Enhancements F13	Finance

Fiscal Year		Major Business Facing and Non-Business Facing SAP-related Projects – In-service Timeline	Functional Area Supported/Module Implemented
F2015			
	<	Supply Chain Solutions - SAP	Supply Chain (partial)
	<	Supply Chain Solutions - SAP Meters	Supply Chain (partial)
	<	Enhancement Pack 7 Upgrade	Platform
F2016			
	<	Distribution Work Scheduling	Work Management (partial)
	<	Customer: Meter Testing Consolidation	Customer
F2017			
	<	Distribution Work Scheduling Enhancement Work Program	Work Management (partial)
Future			
	<	Enterprise Billing Infrastructure	Customer
	<	Supply Chain Applications	Supply Chain (full)
	< <	TBD: Full Work Management for Generation, Transmission and Distribution TBD: Schedule Dispatch & Mobility	Work Management (full)
	<	TBD: Full Asset Management for Generation, Transmission and Distribution	Asset Management (plan)

27.0 D. IT&T FIVE-YEAR PLAN GOALS RELATED TO SAP INITIATIVES

Reference: IT&T PLAN GOALS
Exhibit B-3, Section 5.1, Table 10, p. 52
IT&T plan goals, target and applicability of the goals to the SAP strategy

The following table has been copied from BC Hydro's Consolidated Information Filing (Table 10 on page 52) and modified to include an additional column titled "BCUC IR".

Table 10 IT&T Plan Goals, Target and Applicability of the Goals to the SAP Strategy Projects

IT&T Plan Goal	Targets	Applicability of Goal to SAP Strategy	BCUC IR (see below)
1. Enterprise-wide investment decision making focused on BC Hydro Priorities	Single, enterprise-wide investment plan and governance group	Not applicable – this goal relates to the implementation of processes and governance to improve planning, generally, for IT&T	• 27.1 • 27.2
2. Simplified Integrated Applications with SAP as the Core	< 300 Applications < 50 databases SAP as ERP	This goal and the 'SAP as ERP' target are applicable – discussion follows below	• 27.1
3. Business Satisfaction	TBD %	Partially applicable – discussion follows below	• 27.1
4. Virtualized and controlled environment for lower cost and improved responsiveness	75% virtualization of storage and servers 1 PC per office worker < 10 PC images	Not applicable—this is unrelated to the SAP Strategy	• 27.1 • 27.3
5. Integrated end-to-end with 3-4 key IT services providers	> 85% of external spend on strategic suppliers	Not applicable – this is unrelated to the SAP Strategy	• 27.1 • 27.4
6. Clear information architecture and 'single source of truth' with high quality	Information architecture established meta data model deployed	Partially applicable – discussion follows below	• 27.1 • 27.6 • 27.7
7. Lower cost of IT	30% reduction of IT&T OMA as a % of BC Hydro OMA	Partially applicable – discussion follows below	• 27.1 • 27.5
8. Predictable IT project delivery	90% on-time, on -budget, on-scope of top priority pieces	Not applicable – this goal relates to the implementation of IT&T project delivery processes and governance, generally	• 27.1 • 27.8

1.27.1 What are/were the metrics or key success indicators used to measure achievement of these goals? Please provide an annual

account of the metrics from the statement of the goals to its achievement and the date it was achieved. In Goal 7, please show the changes in the overall cost of IT differentiating between operating, sustain and capital expenditures.

RESPONSE:

BC Hydro did not separately develop or track metrics or key success indicators to specifically measure achievement of these goals.

With regard to Goal 7, please refer to BC Hydro's response to BCUC IR 1.13.1.

In addition, the following table shows total operating and capital costs for the OCIO for the period F2010-F2016.

OCIO Expenditures ($ million)	**F2010**	**F2011**	**F2012**	**F2013**	**F2014**	**F2015**	**F2016**
Actual – Operating Expenditures	64.0	86.4	106.7	108.2	109.3	111.1	107.2
Actual - Capital Expenditures	96.5	80.8	82.6	76.1	76.3	69.8	77.3
Note: F2010 and F2011 operating numbers do not include expenditures related to de-centralized IT&T groups, the costs for which were recorded in the respective business groups							

27.0 D. IT&T FIVE-YEAR PLAN GOALS RELATED TO SAP INITIATIVES

Reference: IT&T PLAN GOALS
Exhibit B-3, Section 5.1, Table 10, p. 52
IT&T plan goals, target and applicability of the goals to the SAP strategy

The following table has been copied from BC Hydro's Consolidated Information Filing (Table 10 on page 52) and modified to include an additional column titled "BCUC IR".

Table 10 IT&T Plan Goals, Target and Applicability of the Goals to the SAP Strategy Projects

IT&T Plan Goal	Targets	Applicability of Goal to SAP Strategy	BCUC IR (see below)
1. Enterprise-wide investment decision making focused on BC Hydro Priorities	Single, enterprise-wide investment plan and governance group	Not applicable – this goal relates to the implementation of processes and governance to improve planning, generally, for IT&T	• 27.1 • 27.2
2. Simplified Integrated Applications with SAP as the Core	< 300 Applications < 50 databases SAP as ERP	This goal and the "SAP as ERP" target are applicable – discussion follows below	• 27.1
3. Business Satisfaction	TBD %	Partially applicable – discussion follows below	• 27.1
4. Virtualized and controlled environment for lower cost and improved responsiveness	75% virtualization of storage and servers 1 PC per office worker < 10 PC images	Not applicable—this is unrelated to the SAP Strategy	• 27.1 • 27.3
5. Integrated end-to-end with 3-4 key IT services providers	> 85% of external spend on strategic suppliers	Not applicable – this is unrelated to the SAP Strategy	• 27.1 • 27.4
6. Clear information architecture and 'single source of truth' with high quality	Information architecture established meta data model deployed	Partially applicable – discussion follows below	• 27.1 • 27.6 • 27.7
7. Lower cost of IT	30% reduction of IT&T OMA as a % of BC Hydro OMA	Partially applicable – discussion follows below	• 27.1 • 27.5
8. Predictable IT project delivery	90% on-time, on -budget, on-scope of top priority pieces	Not applicable – this goal relates to the implementation of IT&T project delivery processes and governance, generally	• 27.1 • 27.8

1.27.2 Please further explain why IT&T Plan Goal 1 – Enterprise-wide investment decision making focused on BC Hydro priorities with a "Target" of "Single, enterprise-wide investment plan and governance group" is not applicable, in whole or in part, to the SAP Strategy.

RESPONSE:

This goal relates to enterprise-wide investment planning and governance across all areas of technology at BC Hydro generally. All technology investments, including SAP investments, would be subject to the results from achieving this goal, however, this goal would be the same whether or not BC Hydro had a SAP strategy.

27.0 D. IT&T FIVE-YEAR PLAN GOALS RELATED TO SAP INITIATIVES

Reference: IT&T PLAN GOALS
Exhibit B-3, Section 5.1, Table 10, p. 52
IT&T plan goals, target and applicability of the goals to the SAP strategy

The following table has been copied from BC Hydro's Consolidated Information Filing (Table 10 on page 52) and modified to include an additional column titled "BCUC IR".

Table 10 IT&T Plan Goals, Target and Applicability of the Goals to the SAP Strategy Projects

IT&T Plan Goal	Targets	Applicability of Goal to SAP Strategy	BCUC IR (see below)
1. Enterprise-wide investment decision making focused on BC Hydro Priorities	Single, enterprise-wide investment plan and governance group	Not applicable – this goal relates to the implementation of processes and governance to improve planning, generally, for IT&T	• 27.1 • 27.2
2. Simplified Integrated Applications with SAP as the Core	< 500 Applications < 50 databases SAP as ERP	This goal and the 'SAP as ERP' target are applicable – discussion follows below	• 27.1
3. Business Satisfaction	TBD %	Partially applicable – discussion follows below	• 27.1
4. Virtualized and controlled environment for lower cost and improved responsiveness	75% virtualization of storage and servers 1 PC per office worker < 10 PC images	Not applicable—this is unrelated to the SAP Strategy	• 27.1 • 27.3
5. Integrated end-to-end with 3-4 key IT services providers	> 85% of external spend on strategic suppliers	Not applicable – this is unrelated to the SAP Strategy	• 27.1 • 27.4
6. Clear information architecture and 'single source of truth' with high quality	Information architecture established meta data model deployed	Partially applicable – discussion follows below	• 27.1 • 27.6 • 27.7
7. Lower cost of IT	30% reduction of IT&T OMA as a % of BC Hydro OMA	Partially applicable – discussion follows below	• 27.1 • 27.5
8. Predictable IT project delivery	90% on-time, on -budget, on-scope of top priority pieces	Not applicable – this goal relates to the implementation of IT&T project delivery processes and governance, generally	• 27.1 • 27.8

1.27.3 Please explain how Goal 4 would not be related to SAP. Is the SAP software not hosted on the virtualized servers and the data not stored in the virtualized storage?

RESPONSE:

In the same way that Goal 1, Enterprise-wide investment decision making, is not related to the SAP Strategy, the goal of virtualizing servers was driven by a general desire to reduce capital and sustainment costs for computer hardware. This goal was not driven by the SAP Strategy and would have been proposed regardless of the software being virtualized.

Nonetheless, the SAP projects have benefited from virtualization since the SAP server environment is virtualized and does not require stand-alone infrastructure.

27.0 D. IT&T FIVE-YEAR PLAN GOALS RELATED TO SAP INITIATIVES

Reference: IT&T PLAN GOALS
Exhibit B-3, Section 5.1, Table 10, p. 52
IT&T plan goals, target and applicability of the goals to the SAP strategy

The following table has been copied from BC Hydro's Consolidated Information Filing (Table 10 on page 52) and modified to include an additional column titled "BCUC IR".

Table 10 IT&T Plan Goals, Target and Applicability of the Goals to the SAP Strategy Projects

IT&T Plan Goal	Targets	Applicability of Goal to SAP Strategy	BCUC IR (see below)
1. Enterprise-wide investment decision making focused on BC Hydro Priorities	Single, enterprise-wide investment plan and governance group	Not applicable – this goal relates to the implementation of processes and governance to improve planning, generally, for IT&T	• 27.1 • 27.2
2. Simplified Integrated Applications with SAP as the Core	< 300 Applications < 50 databases SAP as ERP	This goal and the 'SAP as ERP' target are applicable – discussion follows below	• 27.1
3. Business Satisfaction	TBD %	Partially applicable – discussion follows below	• 27.1
4. Virtualized and controlled environment for lower cost and improved responsiveness	75% virtualization of storage and servers 1 PC per office worker < 10 PC images	Not applicable—this is unrelated to the SAP Strategy	• 27.1 • 27.3
5. Integrated end-to-end with 3-4 key IT services providers	> 85% of external spend on strategic suppliers	Not applicable – this is unrelated to the SAP Strategy	• 27.1 • 27.4
6. Clear information architecture and 'single source of truth' with high quality	Information architecture established meta data model deployed	Partially applicable – discussion follows below	• 27.1 • 27.6 • 27.7
7. Lower cost of IT	30% reduction of IT&T OMA as a % of BC Hydro OMA	Partially applicable – discussion follows below	• 27.1 • 27.5
8. Predictable IT project delivery	90% on-time, on -budget, on-scope of top priority pieces	Not applicable – this goal relates to the implementation of IT&T project delivery processes and governance, generally	• 27.1 • 27.8

1.27.3 Please explain how Goal 4 would not be related to SAP. Is the SAP software not hosted on the virtualized servers and the data not stored in the virtualized storage?

1.27.3.1 Which components of SAP are leveraging the virtualized environment of Goal 4? Which components require stand-alone infrastructure?

RESPONSE:

Please refer to BC Hydro's response to BCUC IR 1.27.3.

27.0 D. IT&T FIVE-YEAR PLAN GOALS RELATED TO SAP INITIATIVES

Reference: IT&T PLAN GOALS
Exhibit B-3, Section 5.1, Table 10, p. 52
IT&T plan goals, target and applicability of the goals to the SAP strategy

The following table has been copied from BC Hydro's Consolidated Information Filing (Table 10 on page 52) and modified to include an additional column titled "BCUC IR".

Table 10 IT&T Plan Goals, Target and Applicability of the Goals to the SAP Strategy Projects

IT&T Plan Goal	Targets	Applicability of Goal to SAP Strategy	BCUC IR (see below)
1. Enterprise-wide investment decision making focused on BC Hydro Priorities	Single, enterprise-wide investment plan and governance group	Not applicable – this goal relates to the implementation of processes and governance to improve planning, generally, for IT&T	• 27.1 • 27.2
2. Simplified Integrated Applications with SAP as the Core	< 300 Applications < 50 databases SAP as ERP	This goal and the 'SAP as ERP' target are applicable – discussion follows below	• 27.1
3. Business Satisfaction	TBD %	Partially applicable – discussion follows below	• 27.1
4. Virtualized and controlled environment for lower cost and improved responsiveness	75% virtualization of storage and servers 1 PC per office worker < 10 PC images	Not applicable—this is unrelated to the SAP Strategy	• 27.1 • 27.3
5. Integrated end-to-end with 3-4 key IT services providers	> 85% of external spend on strategic suppliers	Not applicable – this is unrelated to the SAP Strategy	• 27.1 • 27.4
6. Clear information architecture and 'single source of truth' with high quality	Information architecture established meta data model deployed	Partially applicable – discussion follows below	• 27.1 • 27.6 • 27.7
7. Lower cost of IT	30% reduction of IT&T OMA as a % of BC Hydro OMA	Partially applicable – discussion follows below	• 27.1 • 27.5
8. Predictable IT project delivery	90% on-time, on -budget, on-scope of top priority pieces	Not applicable – this goal relates to the implementation of IT&T project delivery processes and governance, generally	• 27.1 • 27.8

1.27.3 Please explain how Goal 4 would not be related to SAP. Is the SAP software not hosted on the virtualized servers and the data not stored in the virtualized storage?

1.27.3.2 What have been the infrastructure expenditures (servers, storage, networking, security integration, professional services, software licenses, contracted labour) related to the hosting, integration, configuration, operations, backup and recovery, and monitoring of the SAP solutions to date?

RESPONSE:

BC Hydro operates in a shared, virtual server and storage environment that includes SAP and non-SAP systems, and does not track nor allocate

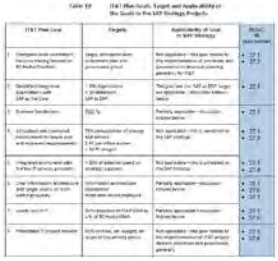
infrastructure related costs to its various software platforms (SAP, FileNet, GIS, Email, etc.). Instead, BC Hydro manages and optimizes its common infrastructure pool from both infrastructure acquisitions and operations perspectives.

For the purposes of answering this IR, BC Hydro conducted an analysis of F2016 infrastructure costs to estimate the "SAP share" of the overall operating costs based on overall processing load and storage attributable to the SAP landscape, and determined that the annual infrastructure operating costs related to SAP were approximately $1.2 million per annum, which represents 7 per cent of BC Hydro's total annual infrastructure costs.

27.0 D. IT&T FIVE-YEAR PLAN GOALS RELATED TO SAP INITIATIVES

Reference: IT&T PLAN GOALS
Exhibit B-3, Section 5.1, Table 10, p. 52
IT&T plan goals, target and applicability of the goals to the SAP strategy

The following table has been copied from BC Hydro's Consolidated Information Filing (Table 10 on page 52) and modified to include an additional column titled "BCUC IR".



1.27.4 As a matter of record, who are the key 3-4 IT service providers of BC Hydro accounting for greater than 85% of external spend, as stated in Goal 5? Has Goal 5 been achieved? When?

RESPONSE:

The key service providers of IT services have changed over the years as BC Hydro transitioned from a single vendor (Accenture) model to a multi-vendor model. Since F2014, the three key service providers (defined as those suppliers on which we spend 5 per cent or more of our total spend) have been Telus, Compugen, and Fujitsu.

As can be seen in the Table below, Goal 5 of the IT&T plan has not been achieved since the adoption of the multi-vendor model. In recent years the three key service providers account for approximately 50 per cent of total IT spend.

Fiscal Year	Key Service Providers	Key Service Provider Spend ($M)	Key Service Provider Spend as % of total spend on all Service Providers	Total Key Service Provider Spend as % of Total Spend on all Service Providers	Total Spend on all Service Providers ($M)
F2008	Accenture Business Services of B.C.	74.6	76%	76%	97.7
F2009	Accenture Business Services of B.C.	190.6	85%	85%	223
F2010	Accenture Business Services of B.C.	141.3	58%	64%	242
	Accenture Inc.	13.7	6%		
F2011	Accenture	71.7	46.9%	61.2%	153
	Compugen Inc.	12.7	8.3%		
	Telus	9.2	6.0%		
F2012	Accenture	66.2	40.0%	57.6%	165
	Compugen Inc.	19.2	11.6%		
	Telus	10.0	6.0%		
F2013	Telus	36.7	22.7%	53.8%	162
	Accenture Business Services of B.C.	33.4	20.6%		
	Compugen	17.0	10.5%		
F2014	Telus	42.4	27.2%	51.0%	156
	Compugen	21.9	14.1%		
	Fujitsu Consulting (Canada) Inc	15.0	9.6%		
F2015	Telus	42.0	25.7%	48.5%	164
	Fujitsu Consulting (Canada) Inc	20.1	12.3%		
	Compugen Inc.	17.2	10.5%		
F2016	Telus	43.2	24.1%	52.6%	179
	Compugen	27.0	15.1%		
	Fujitsu Consulting (Canada) Inc	24.1	13.4%		

27.0 D. IT&T FIVE-YEAR PLAN GOALS RELATED TO SAP INITIATIVES

Reference: IT&T PLAN GOALS
Exhibit B-3, Section 5.1, Table 10, p. 52
IT&T plan goals, target and applicability of the goals to the SAP strategy

As part of explaining the applicability of IT&T Goals to SAP, specifically IT&T Goal 7 – Lower Cost of IT,
BC Hydro states on page 57 of its Consolidated Information Filing:

Through the implementation of the IT&T Plan it was intended that IT&T operating costs would be reduced as a percentage of overall BC Hydro operating costs. This goal is partially related to the implementation of SAP initiatives in that there was an expectation that decommissioning disparate systems, whose functions were being transferred to the integrated SAP environment, would result in operational cost savings for IT&T.

It was not intended, however, that the implementation of SAP initiatives, in and of themselves, would account for a specific operational cost savings. As noted on pages 4 to 5 of the IT&T Plan and as set out in BC Hydro's response to F2011 RRA BCUC IR 1.275.3 (refer to Attachment 25), $4 million of the $9.3 million reduction in IT&T operating costs were related to reduced software and application maintenance costs.

1.27.5 What has been the total IT spend (total amounts in procuring, implementing, enhancing, updating and supporting the SAP system; re-training of staff; and the organizational change costs – i.e., business process changes, etc.) to date for SAP-related projects? What has been the actual dollar savings to date that was a direct contribution to standardizing to SAP? What is the actual annual dollar savings directly attributed to SAP investments?

RESPONSE:

BC Hydro is able to provide SAP-related IT spend information (for example, please refer to section 3 of the Consolidated Information Filing, Tables 2 through 6), but it is unable to provide dollar savings information attributable to the SAP investments.

BC Hydro does track project delivery of business outcomes via the Project Completion and Evaluation Report (PCER) process. However, BC Hydro does not currently have a comprehensive benefits tracking process in place with the

capability of tracking financial benefits at the project or program level. In response to recent internal audit recommendations the Technology group will be planning and implementing a benefit realization process by March 31, 2018 (please refer to Attachment 23 of the Consolidated Information Filing)

BC Hydro notes that during the F2012-F2014 RRA proceeding, in its response to APMC IR 1.58.2.1, BC Hydro previously summarized the type of benefits and reductions that IT&T projects can deliver as follows:

- **Direct benefits which result in financial savings to the organization (e.g., headcount reductions, support cost reductions);**

- **Indirect benefits (e.g., cost increase avoidance, productivity savings that result in staff saving a small portion of time each day which can then be used for other tasks); and**

- **Improved operational capability and risk mitigation to support corporate goals (e.g., reliability, extended life for utility assets, safety and compliance related business objectives).**

Please also refer to BC Hydro's response to CEC IR 1.6.2.

27.0 D. IT&T FIVE-YEAR PLAN GOALS RELATED TO SAP INITIATIVES

Reference: IT&T PLAN GOALS
Exhibit B-3, Section 5.1, Table 10, p. 52
IT&T plan goals, target and applicability of the goals to the SAP strategy

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It was not intended, however, that the implementation of SAP initiatives, in and of themselves, would account for a specific operational cost savings. As noted on pages 4 to 5 of the IT&T Plan and as set out in BC Hydro's response to F2011 RRA BCUC IR 1.275.3 (refer to Attachment 25), $4 million of the $9.3 million reduction in IT&T operating costs were related to reduced software and application maintenance costs.

1.27.6 What is BC Hydro's definition for "high quality" as stated in IT&T Goal 6? What is the measure of success used? Has the goal been achieved? Please elaborate.

RESPONSE:

In the IT&T plan, BC Hydro defines "high quality" specifically in regard to data quality. The goal was 'to provide information to the business in a highly integrated, single source environment with a high degree of data quality'. Further, the plan goes on to note 'we have many databases with multiple locations for the same data. It is difficult to determine what data to use, what is the most accurate and how we can report information. All future implementations will be driven to a single source of truth and may be better facilitated through more integrated application set.'

As noted in BC Hydro's response to BCUC IR 1.27.1, specific measures of success were not established with respect to the IT&T goals.

The goal has been partially achieved. By leveraging a consolidated ERP system (SAP) BC Hydro has alleviated some of the data management challenges associated with an otherwise highly fragmented IT landscape. SAP, along with some other enterprise applications, can now be identified as the system of record for key data entities (financial data, human resources data, project management data, safety and environmental incident data etc.). However, BC Hydro has not fully delivered a cohesive and efficient set of capabilities related to data governance, management and business intelligence, and further work remains within both ERP-related and non-ERP initiatives to further advance BC Hydro's capabilities in regards to data quality and business intelligence (BI). BC

Hydro views this goal through a 'continuous improvement' approach, whereby individual initiatives each contribute to improvement via a disciplined architectural approach emphasizing data standardization, single source of truth, common data repositories and standardized BI tools.

27.0 D. IT&T FIVE-YEAR PLAN GOALS RELATED TO SAP INITIATIVES

Reference: IT&T PLAN GOALS
Exhibit B-3, Section 5.1, Table 10, p. 52
IT&T plan goals, target and applicability of the goals to the SAP strategy

As part of explaining the applicability of IT&T Goals to SAP, specifically IT&T Goal 7 – Lower Cost of IT,
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Through the implementation of the IT&T Plan it was intended that IT&T operating costs would be reduced as a percentage of overall BC Hydro operating costs. This goal is partially related to the implementation of SAP initiatives in that there was an expectation that decommissioning disparate systems, whose functions were being transferred to the integrated SAP environment, would result in operational cost savings for IT&T.

It was not intended, however, that the implementation of SAP initiatives, in and of themselves, would account for a specific operational cost savings. As noted on pages 4 to 5 of the IT&T Plan and as set out in BC Hydro's response to F2011 RRA BCUC IR 1.275.3 (refer to Attachment 25), $4 million of the $9.3 million reduction in IT&T operating costs were related to reduced software and application maintenance costs.

1.27.7 Has BC Hydro implemented a Data Governance framework, Data Stewardship process and/or Data Quality Management tools to ensure the accuracy of "truth" as part of IT&T Goal 6? Please elaborate.

RESPONSE:

No. Please also refer to BC Hydro's response to BCUC IR 1.27.6.

27.0 D. IT&T FIVE-YEAR PLAN GOALS RELATED TO SAP INITIATIVES

Reference: IT&T PLAN GOALS
Exhibit B-3, Section 5.1, Table 10, p. 52
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It was not intended, however, that the implementation of SAP initiatives, in and of themselves, would account for a specific operational cost savings. As noted on pages 4 to 5 of the IT&T Plan and as set out in BC Hydro's response to F2011 RRA BCUC IR 1.275.3 (refer to Attachment 25), $4 million of the $9.3 million reduction in IT&T operating costs were related to reduced software and application maintenance costs.

1.27.8 Please provide further explanation as to why IT&T Plan Goal 8 is not applicable, in whole or in part, to the SAP Strategy.

RESPONSE:

In a similar respect, and as noted in BC Hydro's response to BCUC IRs 1.27.1 and 1.27.3, the SAP Strategy was not the driver behind the IT&T Plan Goal 8 of predictable IT project delivery. BC Hydro was seeking improved project delivery processes that would result in improved and more consistent project outcomes, generally, regardless of technical scope of the project. As with Goal 1 and Goal 5, all IT&T projects including SAP projects would benefit from improvements in project delivery generally.

28.0 E. SAP-RELATED DISCLOSURES TO THE COMMISSION

Reference: REVIEW OF BC HYDRO'S INFORMATION TECHNOLOGY EXPENDITURES
Exhibit A2-2, BC Hydro January 8, 2016 Letter to the Commission, p. 7
Disclosures during F2009-F2010 RRA oral hearing

BC Hydro states on page 7 of its letter to the Commission dated January 8, 2016: "In summary in both its testimony and in its response to Undertaking 62, BC Hydro failed to take the opportunity to bring the Commission up-to-date with respect to its approach to IT&T systems."

1.28.1 For clarity, please confirm that BC Hydro does not believe that the incomplete disclosures made, in direct response to questions asked during the F2009-F2010 RRA oral hearing, were a contravention of any section of the UCA nor of any rules or requirements of the Commission.

RESPONSE:

Confirmed.

BC Hydro's Chief Information Officer Mr. Stuckert specifically answered all questions put to him during the F2009/F2010 RRA hearing. In that respect, Mr. Stuckert's answers during that hearing were not incomplete. However, as BC Hydro discussed in its January 8, 2016 response to the Mr. Dix complaint, Mr. Stuckert did not take the opportunity to update the Commission with respect to BC Hydro's evolving thinking with respect to the SAP Strategy.

In its April 8, 2016 response to BCUC IRs 1.1.1 and 1.1.1.1 (Exhibit A2-5), BC Hydro confirmed its view that the failure to provide information beyond what was asked for was not a contravention of the Utilities Commission Act. BC Hydro further confirms its view that such a failure is not a contravention of any rules or requirements of the Commission.

28.0 E. SAP-RELATED DISCLOSURES TO THE COMMISSION

Reference: REVIEW OF BC HYDRO'S INFORMATION TECHNOLOGY EXPENDITURES
Exhibit A2-2, BC Hydro January 8, 2016 Letter to the Commission, p. 7
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1.28.1 For clarity, please confirm that BC Hydro does not believe that the incomplete disclosures made, in direct response to questions asked during the F2009-F2010 RRA oral hearing, were a contravention of any section of the UCA nor of any rules or requirements of the Commission.

1.28.1.1 Please clarify which version(s) of the UCA BC Hydro is referring to: the currently enacted version, the version in place during the F2009-2010 RRA oral hearing, or another version?

RESPONSE:

BC Hydro is referring to the version of the *Utilities Commission Act* in place during the F2009-F2010 RRA oral hearing.

29.0 E. SAP-RELATED DISCLOSURES TO THE COMMISSION

Reference: BC HYDRO RESPONSES TO COMMISSION STAFF QUESTIONS ON IT EXPENSES
Exhibit A2-5, BC Hydro April 8, 2016 Response to Staff Question 1.1.2
Disclosures during F2009-F2010 RRA oral hearing

In BCUC staff question 1.1.2, BC Hydro was asked the following question: "In BC Hydro's opinion, to ensure accountability, what would be a reasonable response from the Commission when a regulated utility does not provide full and complete disclosure within a proceeding?"

In response, BC Hydro submitted the following:

4. If the failure to disclose did not constitute a breach of the Act nor materially affect a Commission decision, should the Commission nevertheless address specific questions to the utility pursuant to section 43 of the Act to ensure that the information that was not previously disclosed is required to be disclosed in future proceedings?

1.29.1 Please clarify how BC Hydro believes that the Commission might determine if a failure to disclose information did not materially affect a Commission decision.

RESPONSE:

Unknown information would be material to the decision if knowledge of the information would have changed the decision in some important way. This would not be based on hindsight, but rather on the circumstances and facts as known and available at the time of the decision, assuming the information had also been known then.

30.0 E. SAP-RELATED DISCLOSURES TO THE COMMISSION

Reference: SAP-RELATED DISCLOSURES TO THE COMMISSION
Exhibit B-3, Section 7.1, pp. 72-82
Disclosures during oral hearings and regulatory requirements for information disclosed

On pages 72-82 of the Consolidated Information Filing, BC Hydro provides "Table 12: Summary of Utilities Commission Act, Provisions and Other Requirements and Commitments related to Capital Projects and Expenditures."

On page 72, BC Hydro states this table provides "a summary of the Utilities Commission Act provisions, BC Hydro Commitments and Commission requirements in effect year by year that related to BC Hydro's disclosure of capital projects and expenditures, including SAP related over the period F2009 – F2016."

1.30.1 During F2009-F2016, what internal controls and guidance existed/exists at BC Hydro to ensure information disclosed to the Commission during oral hearings, in relation to the requirements of Table 12, is complete, accurate and timely?

RESPONSE:

Table 12 of the Consolidated Information Filing provides a summary of the *Utilities Commission Act* provisions and other requirements and BC Hydro commitments in effect year by year that related to BC Hydro's reporting to the Commission, in writing, of capital projects and expenditures, including SAP-related over the period F2009 - F2016. As Table 12 relates to the filing of written plans, reports and expenditure schedules, the relation of Table 12 to internal controls or guidance for oral testimony at Commission hearings is not applicable.

For a discussion of regulatory and legal requirements for making complete, accurate and timely disclosures to the Commission, please refer in particular to BC Hydro's response to Commission IRs 1.30.1.1, 1.30.1.2, 1.30.1.3, 1.30.5, and 1.30.5.1.

30.0 E. SAP-RELATED DISCLOSURES TO THE COMMISSION

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1.30.1 During F2009-F2016, what internal controls and guidance existed/exists at BC Hydro to ensure information disclosed to the Commission during oral hearings, in relation to the requirements of Table 12, is complete, accurate and timely?

1.30.1.1 Specifically, leading up to and during an oral hearing, what steps are taken by (i) senior regulatory management and (ii) legal counsel to ensure this disclosure?

RESPONSE:

Prior to an oral hearing, BC Hydro executives and staff expected to be witnesses at the oral hearing will be briefed by BC Hydro's senior regulatory management and/or legal counsel on the hearing process including the following:

- **Witnesses will provide testimony at the hearing under solemn affirmation administered by the hearing officer, and the importance of providing truthful testimony;**
- **Witnesses will be expected to be fully prepared to participate in the hearing in a cooperative, open and informed manner;**
- **Layout of the hearing room, formality and decorum, including that the hearing will be like court;**
- **The roles of the Commission Panel, Panel Chair, Commission counsel, BC Hydro counsel, intervener counsel and others that will present at the hearing;**
- **Sequence of procedures at the hearing; and**

- **Responsibilities of the witness during breaks in the hearing.**

During the oral hearing, while the witness is under oath and until the Chair allows the witness to step down, BC Hydro's legal counsel will have limited off the record interaction with the witness.

The witness will review the transcript of their testimony and if the witness notes any errors in their testimony or in transcription, the witness will bring these forward to BC Hydro regulatory staff or legal counsel. If there was an error in the testimony, the materiality of the error will be assessed and BC Hydro's counsel could ask the Chair to permit the witness to add to or correct their testimony where appropriate. Alternatively, BC Hydro's counsel could ask the witness to clarify or add to their testimony on redirect.

If BC Hydro's regulatory staff or legal counsel identified what they thought might be an error in a witness's testimony, a similar procedure would be followed. The potential error and its materiality would be assessed, and BC Hydro's counsel could ask the Chair to permit the witness to add to or correct their testimony where appropriate. Alternatively, BC Hydro's counsel could ask the witness to clarify or add to their testimony on redirect.

30.0 E. SAP-RELATED DISCLOSURES TO THE COMMISSION

Reference: SAP-RELATED DISCLOSURES TO THE COMMISSION
Exhibit B-3, Section 7.1, pp. 72-82
Disclosures during oral hearings and regulatory requirements for information disclosed

On pages 72-82 of the Consolidated Information Filing, BC Hydro provides "Table 12: Summary of Utilities Commission Act, Provisions and Other Requirements and Commitments related to Capital Projects and Expenditures."

On page 72, BC Hydro states this table provides "a summary of the Utilities Commission Act provisions, BC Hydro Commitments and Commission requirements in effect year by year that related to BC Hydro's disclosure of capital projects and expenditures, including SAP related over the period F2009 – F2016."

1.30.1 During F2009-F2016, what internal controls and guidance existed/exists at BC Hydro to ensure information disclosed to the Commission during oral hearings, in relation to the requirements of Table 12, is complete, accurate and timely?

1.30.1.2 After a hearing, what steps are taken by both senior regulatory management and legal counsel to ensure disclosures made during the oral hearing were complete, accurate and timely?

RESPONSE:

The procedure followed after the hearing has ended is similar to the procedure followed during the hearing as described in BC Hydro's response to BCUC IR 1.30.1.1. The difference is that notice of a material error would be provided to the Commission in a written submission given that the hearing has ended.

If a material error was discovered after the hearing ended but before the Commission issued its decision, the Commission could request submissions from the parties on how to proceed and/or resume the oral hearing for further testimony. If a material error was discovered after the Commission issued its decision, the Commission could apply its reconsideration and variance process and criteria to decide whether to order a variance.

30.0 E. SAP-RELATED DISCLOSURES TO THE COMMISSION

Reference: SAP-RELATED DISCLOSURES TO THE COMMISSION
Exhibit B-3, Section 7.1, pp. 72-82
Disclosures during oral hearings and regulatory requirements for information disclosed

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On page 72, BC Hydro states this table provides "a summary of the Utilities Commission Act provisions, BC Hydro Commitments and Commission requirements in effect year by year that related to BC Hydro's disclosure of capital projects and expenditures, including SAP related over the period F2009 – F2016."

1.30.1 During F2009-F2016, what internal controls and guidance existed/exists at BC Hydro to ensure information disclosed to the Commission during oral hearings, in relation to the requirements of Table 12, is complete, accurate and timely?

1.30.1.3 Who is responsible and what happens if an inaccurate, incomplete or untimely disclosure is made to the Commission by a Utility Witness during an oral hearing?

RESPONSE:

Responsibility would depend on the circumstances. The individual witness will have responsibility if they willfully and knowingly give false testimony under oath during an oral hearing. BC Hydro could have responsibility if it or its officer instructed the witness to give false testimony under oath. BC Hydro or its officer or employee could have responsibility if the false testimony was discovered and BC Hydro or the officer or employee failed or refused to correct the record.

What happens would also depend on the circumstances, such as the extent to which the witness's statement was willfully and knowingly false, materiality to an issue in the proceeding, date of discovery and the stage of the hearing, amongst other things.

30.0 E. SAP-RELATED DISCLOSURES TO THE COMMISSION

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1.30.2 Should it be a requirement of the Commission that utility witnesses must provide, to the best of their knowledge, complete, accurate and timely information to the Commission in response to every question asked during an oral hearing?

RESPONSE:

BC Hydro believes that this is currently a requirement of the Commission and that there is no need to change the Commission's existing oral hearing processes and practices.

Witnesses testify under oath at the Commission's hearing. Witnesses are bound by the oath they take, and are subject to prosecution for perjury if they willfully and knowingly give false testimony.

The individual questioning the witness (i.e., intervener or Commission counsel, or Panel member) will ask questions to illicit the information they consider important. The examiner will decide how to frame their question, for example as an open-ended or closed-ended question, and will ask follow up questions if they consider that the witness has not fully answered the question. If a witness is not providing complete and timely answers, or if a witness provides an answer beyond the scope of the question as framed, the examiner can object and the Chair can direct or admonish the witness if necessary.

The Commission's oral hearing processes are rooted in the long-standing processes of our Courts while allowing more flexibility as is appropriate for an administrative tribunal.

30.0 E. SAP-RELATED DISCLOSURES TO THE COMMISSION

Reference: SAP-RELATED DISCLOSURES TO THE COMMISSION
Exhibit B-3, Section 7.1, pp. 72-82
Disclosures during oral hearings and regulatory requirements for information disclosed

On pages 72-82 of the Consolidated Information Filing, BC Hydro provides "Table 12: Summary of Utilities Commission Act, Provisions and Other Requirements and Commitments related to Capital Projects and Expenditures."

On page 72, BC Hydro states this table provides "a summary of the Utilities Commission Act provisions, BC Hydro Commitments and Commission requirements in effect year by year that related to BC Hydro's disclosure of capital projects and expenditures, including SAP related over the period F2009 – F2016."

1.30.3 Should it be a requirement of the Commission that utility senior regulatory management and/or legal counsel must, as soon as possible, correct any information provided by a utility witness that is not complete, accurate or timely?

RESPONSE:

BC Hydro believes that this is currently a requirement of the Commission, subject only to the considerations discussed in BC Hydro's response to BCUC IRs 1.30.1.1, 1.30.1.2 and 1.30.2.

30.0 E. SAP-RELATED DISCLOSURES TO THE COMMISSION

Reference: SAP-RELATED DISCLOSURES TO THE COMMISSION
Exhibit B-3, Section 7.1, pp. 72-82
Disclosures during oral hearings and regulatory requirements for information disclosed

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1.30.4 Why does BC Hydro believe utility witnesses are "sworn in" by the hearing officer prior to participating in an oral hearing?

RESPONSE:

The oath creates solemnity, sets an evidentiary standard and is a formal and public promise by the witness, breach of which is punishable.

30.0 E. SAP-RELATED DISCLOSURES TO THE COMMISSION

Reference: SAP-RELATED DISCLOSURES TO THE COMMISSION
Exhibit B-3, Section 7.1, pp. 72-82
Disclosures during oral hearings and regulatory requirements for information disclosed

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1.30.5 Are there any other sections of the *Utilities Commission Act* or other Commission requirements that establish regulatory requirements for BC Hydro to make complete, accurate and timely disclosures to the Commission within its filings to the Commission?

RESPONSE:

Yes. For example, section 106 establishes disclosure related requirements, setting standards both specifically and generally. The Act's provisions taken as a whole indicate the Legislature's intention to set high standards of utility conduct.

Please note that Table 12 of the Consolidated Information Filing provides a summary of the Act's provisions, BC Hydro commitments and Commission requirements in effect year by year <u>that related to BC Hydro's disclosure of capital projects and expenditures</u>, including SAP related over the period F2009 – F2016. Table 12 does not include a summary of the Act's general provisions and provisions related to other BC Hydro filings that do not relate to <u>capital projects and expenditures.</u>

30.0 E. SAP-RELATED DISCLOSURES TO THE COMMISSION

Reference: SAP-RELATED DISCLOSURES TO THE COMMISSION
Exhibit B-3, Section 7.1, pp. 72-82
Disclosures during oral hearings and regulatory requirements for information disclosed

On pages 72-82 of the Consolidated Information Filing, BC Hydro provides "Table 12: Summary of Utilities Commission Act, Provisions and Other Requirements and Commitments related to Capital Projects and Expenditures."

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1.30.5 Are there any other sections of the *Utilities Commission Act* or other Commission requirements that establish regulatory requirements for BC Hydro to make complete, accurate and timely disclosures to the Commission within its filings to the Commission?

1.30.5.1 What regulatory requirements exist for making complete, accurate and timely disclosures in filings to the Commission in relation to capital projects and expenditures?

RESPONSE:

There is no specific regulatory requirement that refers to "complete, accurate and timely disclosure". Disclosure requirements are governed principally by the Act's provisions respecting filings and respecting evidentiary offences, the stipulations of the oaths administered to witnesses, normal rules of evidence and burdens of proof, the information request process, and for oral hearings, the rights of cross-examination. A utility risks sanction for more serious breaches, and Commission orders and/or failure of its application for lesser breaches, plus loss of credibility and reputation. These are significant deterrents to deliberate wrongdoing and strong incentives to completeness, accuracy and timeliness.

30.0 E. SAP-RELATED DISCLOSURES TO THE COMMISSION

Reference: SAP-RELATED DISCLOSURES TO THE COMMISSION
Exhibit B-3, Section 7.1, pp. 72-82
Disclosures during oral hearings and regulatory requirements for information disclosed

On pages 72-82 of the Consolidated Information Filing, BC Hydro provides "Table 12: Summary of Utilities Commission Act, Provisions and Other Requirements and Commitments related to Capital Projects and Expenditures."

On page 72, BC Hydro states this table provides "a summary of the Utilities Commission Act provisions, BC Hydro Commitments and Commission requirements in effect year by year that related to BC Hydro's disclosure of capital projects and expenditures, including SAP related over the period F2009 – F2016."

1.30.5 Are there any other sections of the *Utilities Commission Act* or other Commission requirements that establish regulatory requirements for BC Hydro to make complete, accurate and timely disclosures to the Commission within its filings to the Commission?

1.30.5.2 What regulatory requirements exist for making complete, accurate and timely disclosures within oral hearings before the Commission?

RESPONSE:

Please refer to BC Hydro's response to BCUC IR 1.30.5.1.

30.0 E. SAP-RELATED DISCLOSURES TO THE COMMISSION

Reference: SAP-RELATED DISCLOSURES TO THE COMMISSION
Exhibit B-3, Section 7.1, pp. 72-82
Disclosures during oral hearings and regulatory requirements for information disclosed

On pages 72-82 of the Consolidated Information Filing, BC Hydro provides "Table 12: Summary of Utilities Commission Act, Provisions and Other Requirements and Commitments related to Capital Projects and Expenditures."

On page 72, BC Hydro states this table provides "a summary of the Utilities Commission Act provisions, BC Hydro Commitments and Commission requirements in effect year by year that related to BC Hydro's disclosure of capital projects and expenditures, including SAP related over the period F2009 – F2016."

1.30.6 Does BC Hydro believe it would be beneficial for the Commission to establish guidance or requirements clarifying the Commission's expectations, responsibilities and/or conduct of utilities and witnesses during oral hearings?

RESPONSE:

No. BC Hydro believes the high standard of disclosure expected is already clear and known to utilities, that utilities (and certainly BC Hydro) take applications and their obligations to the Commission, interveners, ratepayers and the public very seriously, and that the Commission is sufficiently empowered to address shortcomings when it is appropriate to do so.

Please also refer to BC Hydro's response to BCUC IRs 1.30.2 and 1.30.5.1.

30.0 E. SAP-RELATED DISCLOSURES TO THE COMMISSION

Reference: SAP-RELATED DISCLOSURES TO THE COMMISSION
Exhibit B-3, Section 7.1, pp. 72-82
Disclosures during oral hearings and regulatory requirements for information disclosed

On pages 72-82 of the Consolidated Information Filing, BC Hydro provides "Table 12: Summary of Utilities Commission Act, Provisions and Other Requirements and Commitments related to Capital Projects and Expenditures."

On page 72, BC Hydro states this table provides "a summary of the Utilities Commission Act provisions, BC Hydro Commitments and Commission requirements in effect year by year that related to BC Hydro's disclosure of capital projects and expenditures, including SAP related over the period F2009 – F2016."

1.30.6 Does BC Hydro believe it would be beneficial for the Commission to establish guidance or requirements clarifying the Commission's expectations, responsibilities and/or conduct of utilities and witnesses during oral hearings?

1.30.6.1 If the Commission were to recommend that such guidance or requirements be developed, what approach would BC Hydro recommend for this process?

RESPONSE:

If Commission were to make such a recommendation, BC Hydro would recommend that the Commission have a public process for all stakeholders to submit comments prior to establishing such guidance or requirements. A process similar to that used to develop the Commission's Order No. G-1-16 Rules of Practice and Procedure would be reasonable.

31.0 E. SAP-RELATED DISCLOSURES TO THE COMMISSION

Reference: SAP-RELATED DISCLOSURES TO THE COMMISSION
Exhibit B-3, Section 7.2, p. 85
Regulatory filing requirements – PPM project

On page 85 of the Consolidated Information Filing, BC Hydro states that during the F2012-F2014 RRA: "BC Hydro explained to the Commission its reasons for not filing an application for approval of PPM project costs, and the Commission did not indicate any concerns."[34]

Footnote 34 on page 85 provides a reference to BC Hydro's response to BCUC IRs 1.261.1 and 1.261.1.1 in the F2012-F2014 RRA proceeding, filed as Attachment 46.

1.31.1 Did BC Hydro explicitly seek approval or consent for its plan to not file an application for PPM project costs in the F2012-F2014 RRA?

RESPONSE:

No. BC Hydro was not required under the *Utilities Commission Act* to apply to the Commission for approval of the Project & Portfolio Management (PPM) project or the related costs. Please refer to Table 12 and Figure 5 of the Consolidated Information Filing for the reason this was the case during the applicable time period. Accordingly, BC Hydro did not require the Commission's consent to not apply for approval of the PPM project or the related costs.

31.0 E. SAP-RELATED DISCLOSURES TO THE COMMISSION

Reference: SAP-RELATED DISCLOSURES TO THE COMMISSION
Exhibit B-3, Section 7.2, p. 85
Regulatory filing requirements – PPM project

On page 85 of the Consolidated Information Filing, BC Hydro states that during the F2012-F2014 RRA: "BC Hydro explained to the Commission its reasons for not filing an application for approval of PPM project costs, and the Commission did not indicate any concerns."[34]

Footnote 34 on page 85 provides a reference to BC Hydro's response to BCUC IRs 1.261.1 and 1.261.1.1 in the F2012-F2014 RRA proceeding, filed as Attachment 46.

1.31.2 Were the PPM costs and the matter of cost approval within the scope of the F2012-F2014 RRA? Please explain why or why not.

RESPONSE:

PPM project costs were included in Appendix J of the F2012-F2014 RRA. The project is reported at Appendix J, page 164 of 196, of the Amended F2012-F2014 RRA.

With respect to the matter of cost approval, BC Hydro did not seek any Commission approvals in the F2012-F2014 RRA with respect to its capital plans or any of the individual capital projects described in the application. This was made clear at pages 6-1 to 6-2 of the Amended F2012-F2014 RRA:

> **"BC Hydro has recently filed new guidelines regarding BCUC review of its capital projects, namely the Capital Project Filing Guidelines (Guidelines). The Guidelines are at Appendix U, which includes BC Hydro's current view of anticipated capital-related applications. BC Hydro is not seeking any relief in this application with respect to its capital plans nor any of the individual capital projects described in the Application."**

The referenced Guidelines dated July 2010 have been filed on the record of this current proceeding as Attachment 37 to BC Hydro's Consolidated Information Filing (Exhibit B-3).

31.0 E. SAP-RELATED DISCLOSURES TO THE COMMISSION

Reference: SAP-RELATED DISCLOSURES TO THE COMMISSION
Exhibit B-3, Section 7.2, p. 85
Regulatory filing requirements – PPM project

On page 85 of the Consolidated Information Filing, BC Hydro states that during the F2012-F2014 RRA: "BC Hydro explained to the Commission its reasons for not filing an application for approval of PPM project costs, and the Commission did not indicate any concerns."[34]

Footnote 34 on page 85 provides a reference to BC Hydro's response to BCUC IRs 1.261.1 and 1.261.1.1 in the F2012-F2014 RRA proceeding, filed as Attachment 46.

1.31.3 Is it BC Hydro's position that an application for the PPM project was not required by the UCA or existing Commission requirements?

RESPONSE:

Yes. An application to the Commission for approval of the PPM project was not required by the *Utilities Commission Act* or Commission requirements. Please refer to Table 12 and Figure 5 of the Consolidated Information Filing for the reason this was the case during the applicable time period.

31.0 E. SAP-RELATED DISCLOSURES TO THE COMMISSION

Reference: SAP-RELATED DISCLOSURES TO THE COMMISSION
Exhibit B-3, Section 7.2, p. 85
Regulatory filing requirements – PPM project

On page 85 of the Consolidated Information Filing, BC Hydro states that during the F2012-F2014 RRA: "BC Hydro explained to the Commission its reasons for not filing an application for approval of PPM project costs, and the Commission did not indicate any concerns."[34]

Footnote 34 on page 85 provides a reference to BC Hydro's response to BCUC IRs 1.261.1 and 1.261.1.1 in the F2012-F2014 RRA proceeding, filed as Attachment 46.

1.31.3 Is it BC Hydro's position that an application for the PPM project was not required by the UCA or existing Commission requirements?

1.31.3.1 If not, why did BC Hydro inform the Commission of its intent to not file an application for approval of PPM project costs during the F2012-F2014 RRA?

RESPONSE:

The PPM project began before the Capital Project Filing Guidelines (Guidelines) were submitted to the Commission by BC Hydro. The Guidelines include capital project expenditure threshold levels that will trigger an application by BC Hydro for the approval of project costs. The expenditure threshold is $20 million for IT&T projects. These Guidelines were submitted in July 2010. A copy of the Guidelines filing is provided at Attachment 37 of the Consolidated Information Filing.

The implementation phase of the PPM project began in December 2009 (eight months before BC Hydro filed the Guidelines with the Commission). At the beginning of implementation, the total capital costs for the project were expected to be approximately $15 million. Eighteen months later in May 2011, an EAR revision was approved to increase the total capital costs to approximately $21 million.

As part of the F2012-F2014 RRA, the Commission asked BC Hydro if it would be filing a separate application for PPM project costs in accordance with the Guidelines, since the project was now expected to exceed the threshold of $20 million. The BCUC's IR and BC Hydro's response in that regard are provided at Attachment 46 of the Consolidated Information Filing. BC Hydro informed the Commission in December 2011 that it did not plan to file an application for approval of PPM costs, since the project implementation phase began before the Guidelines and the $20 million threshold existed, and the project was already 18 months into implementation when the project costs were increased to exceed $20 million.

31.0 E. SAP-RELATED DISCLOSURES TO THE COMMISSION

Reference: SAP-RELATED DISCLOSURES TO THE COMMISSION
Exhibit B-3, Section 7.2, p. 85
Regulatory filing requirements – PPM project

On page 85 of the Consolidated Information Filing, BC Hydro states that during the F2012-F2014 RRA: "BC Hydro explained to the Commission its reasons for not filing an application for approval of PPM project costs, and the Commission did not indicate any concerns."[34]

Footnote 34 on page 85 provides a reference to BC Hydro's response to BCUC IRs 1.261.1 and 1.261.1.1 in the F2012-F2014 RRA proceeding, filed as Attachment 46.

1.31.4 Is it BC Hydro's submission that if a utility informs the Commission that it does not intend to file an application, and if the Commission makes no response to the matter, then the utility is no longer required to file an application despite potential filing requirements?

RESPONSE:

No.

31.0 E. SAP-RELATED DISCLOSURES TO THE COMMISSION

Reference: SAP-RELATED DISCLOSURES TO THE COMMISSION
Exhibit B-3, Section 7.2, p. 85
Regulatory filing requirements – PPM project

On page 85 of the Consolidated Information Filing, BC Hydro states that during the F2012-F2014 RRA: "BC Hydro explained to the Commission its reasons for not filing an application for approval of PPM project costs, and the Commission did not indicate any concerns."[34]

Footnote 34 on page 85 provides a reference to BC Hydro's response to BCUC IRs 1.261.1 and 1.261.1.1 in the F2012-F2014 RRA proceeding, filed as Attachment 46.

1.31.5 Please explain when and how BC Hydro would have expected to receive indication from the Commission of any concerns related to BC Hydro not filing an application for approval of PPM project costs, given that BC Hydro first notified the Commission of this through responses to IRs.

RESPONSE:

BC Hydro did not expect that the Commission would have any concerns related to BC Hydro not filing an application for approval of the PPM project costs given the circumstances, as outlined in BC Hydro's response to BCUC IR 1.31.3.1. BC Hydro reported the PPM project in the F2012-F2014 RRA; however, for the same reasons outlined in BC Hydro's response to BCUC IR 1.31.3.1, BC Hydro did not specifically address its plan not to file a section 44.2 application for approval of the PPM project.

If the Commission had concerns with BC Hydro's decisions it could have conveyed its concerns to BC Hydro in any of several ways, including:

- **The Commission Panel for the F2012-F2014 Revenue Requirements Application proceeding could have raised the issue in the proceeding and requested that the parties make submissions regarding the issue;**
- **Commission staff could have discussed the concerns with BC Hydro's Chief Regulatory Officer;**
- **Commission counsel could have discussed the concerns with BC Hydro's counsel; and/or**
- **The Commission could have expressed the concerns in a letter to BC Hydro.**

32.0 E. SAP-RELATED DISCLOSURES TO THE COMMISSION

Reference: SAP-RELATED DISCLOSURES TO THE COMMISSION
Exhibit B-3, Section 7.2, pp. 83-84
SAP-related disclosures to the Commission

On page 84 of the Consolidated Information Filing, BC Hydro states:

For all IT&T projects during the F2009 to F2016 period BC Hydro was not required under the Utilities Commission Act or by its own voluntary commitment to file a specific application for approval under section 44.2 of the Act as all projects fell below the $50 million threshold for Major Threshold Projects in place during F2007 to F2010, and below the $20 million threshold for IT&T projects under BC Hydro's Capital Project Filing Guideline that came into effect in July 2010 (F2011).

1.32.1 At what stage in the development of an IT&T project does BC Hydro's regulatory department become involved and at what point does the regulatory department make recommendations to the Executive Team (and/or Board) regarding disclosure of the project to the Commission? Please explain and provide examples of specific SAP-related projects, including the PPM, PSW, and Supply Chain Applications projects.

RESPONSE:

BC Hydro informs the Commission of planned capital projects, including IT&T projects, through:

- **Annual Reports to the Commission (as Attachment to section 8 of the Annual Report – Summary of Planned Capital Expenditures);**
- **Revenue Requirements Applications which include information on capital additions and planned capital projects (see Chapter 6 and Appendices I & J);**
- **Periodic letters to the Commission providing an estimate of the timing of upcoming regulatory filings and applications; and**
- **Applications under section 44.2 of the *Utilities Commission Act.***

BC Hydro has committed to file under section 44.2 of the *Utilities Commission Act* specific applications for approval of IT&T projects with expected costs exceeding the $20 million threshold for IT&T projects under BC Hydro's Capital Project Filing Guidelines (Guidelines) that came into effect in July 2010. The Guidelines were approved by BC Hydro executives, and IT&T project sponsors are aware of these Guidelines. BC Hydro's Regulatory department advises on requirements for

projects that are brought to its attention. The Regulatory department does not typically make recommendations to the Executive Team or Board regarding disclosure of projects to the Commission because these disclosures are part of the normal course of business in compliance with legal requirements or the Guidelines.

With respect to an application in accordance with the Guidelines, initial discussions between BC Hydro's regulatory department and capital planning groups, including groups planning IT&T projects, will typically take place once sufficient information is available for the planning group to estimate whether the costs of the leading project alternatives may be in excess of the threshold in the Guidelines for that type of capital investment. In the case of IT&T projects, the threshold is $20 million.

The following are examples:

<u>Plan and Schedule Work (PSW)</u>

The PSW project was initially forecast to have a capital cost of $20 million in the F2011 RRA and $34 million in the F2012-F2014 Amended RRA. During that time, BC Hydro was anticipating that it would bring forward an application to the Commission for the PSW project. BC Hydro first notified the Commission on July 23, 2010 that it anticipated filing an application for PSW. This project was included in a list of projects for which BC Hydro anticipated filing an application with the Commission at the time the Guidelines were submitted to the Commission (refer to Attachment 37 of the Consolidated Information Filing). On April 5, 2012, as part of BC Hydro's Amended F2012-F2014 RRA, the PSW project was again listed on page 6 of 6 of Amended Appendix U, which provided a copy of the Guidelines (refer to attachment to this IR response).

Subsequent to the filing of the Amended F2012-F2014 RRA, the scope of the PSW project was significantly reduced and the forecast cost of the PSW project was reduced to $10.5 million ($2.8 million operating and $7.7 million capital). As a result of the overall cost of the project falling well below the $20 million threshold, BC Hydro did not file an Application with the Commission for the project.

<u>Supply Chain Applications</u>

BC Hydro notified the Commission of its intention to file an application to the Commission for the Supply Chain Applications project on June 29, 2015 in its letter for Annual Forecasting of Commission Regulatory Filing Requirements. BC Hydro followed that with notification that it planned to file an application under Section 44.2 of the *Utilities Commission Act* on July 30, 2015, in its 2015 Annual Financial Report to the Commission. These notices were made shortly after BC Hydro began undertaking early definition phase work on the project and based on the expectation that the forecast capital cost of the project would exceed

$20 million. A meeting was later held between BC Hydro and Commission staff on November 4, 2015 to discuss the project and the anticipated application. A further meeting between BC Hydro and Commission Staff to discuss filing of the Supply Chain Application was held on May 12, 2016.

BC Hydro has confirmed its current intention to submit an application with the Commission through: its submissions in the BC Hydro SAP Inquiry, its F2016 Annual Financial Report to the Commission and its response, dated June 29, 2016, to a Commission request for information on BC Hydro's anticipated filings to the Commission. BC Hydro has also described the project in its F2017-F2019 Revenue Requirements Application (refer to Exhibit B-1-1 in that proceeding, Chapter 6; Appendix I, page 7 of 9 and Appendix J, page 75 of 86).

PPM

Please refer to pages 84 to 85 of the Consolidated Information Filing and related attachments, as well as BC Hydro's responses to BCUC IR 1.31.0 series for a discussion of PPM-related disclosures to the Commission.

Based on the Capital Project Filing Guidelines, BC Hydro currently anticipates it will be filing applications for the following projects.

Generation and Transmission

- John Hart Upgrade Project
- Cheakamus Units 1 and 2 Generator Replacement Project
- GM Shrum Spillway Gate Upgrade Project
- La Joie Seismic Improvements
- WAC Bennett Dam Riprap Upgrade Project
- Dawson – Chetwynd Area Transmission Project
- GM Shrum – Dawson Area Transmission Project

Properties and IT

- New Prince George Building
- Plan and Schedule Work