

REQUESTOR NAME: **Richard T. Landale BCUC Intervener C-1**

INFORMATION REQUEST ROUND NO: 1

TO: BRITISH COLUMBIA HYDRO & POWER AUTHORITY

DATE: **19 April 2017**

PROJECT NO: **3698907 BCUC**

APPLICATION NAME: BC Hydro Salmon River Diversion Ceasing of Operations Application

1.0 Background:

1.1 Will BC Hydro please provide more background details that relate to the original justifications for the creation of the “The Salmon River Diversion (Diversion), constructed in 1957 to 1958, includes a timber-crib diversion dam (Dam) and canal which diverts water from the Salmon River through a canal to Brewster Lake (Canal), and then to the Lower Campbell Reservoir”. In the context of water flow supplements in 1957/58, how much water then, versus the “redirected flow supplements electricity generation at BC Hydro’s Ladore and John Hart Generating Stations by approximately 4 per cent”.

1.2 Water Flows:

- 1.2.1 Will BC Hydro please expand on their reference: “The Diversion is currently in use, though operating below its original design”. In what manner is the diversion, dam, canal, river flows operating below its original design.
- 1.2.2 Please explain what are the main causes for the reduced river flows. Such as, are these reduced river flows from the original design parameters caused by rainfall, induced by upstream supply environmental conditions, or directly related to BC Hydro’s presence at this diversion location.
- 1.2.3 Will BC Hydro please provide a table of the water flow, with their respective impact (4% or otherwise) since 1960 to present day, being diverted from this location through to the Brewster Lake Canal into the Lower Campbell Reservoir.
- 1.2.4 Will BC Hydro please explain what other water flow resources within the given supply area to the Lower Campbell Reservoir that will replace or augment BC Hydro’s needs should the Commission approve the cessation of operations.
- 1.2.5 If there are no other natural river water flow resources “at hand” so to speak, does BC Hydro have future plans within the given area or catch basin to create by other means, such as “Redirection” the necessary water flows into the Lower Campbell Reservoir to maintain the 4% reservoir level for generation at the Ladore and John Hart Generating Stations. This “IR” basically requires further clarification of Section 3.2.1 Cease Operation and Removal page 25 of 42 lines, 23 to 26, quote: “Ceasing to operate the Diversion would not affect operation of the Ladore or John Hart Generating Stations, other than reducing inflows; reservoir elevations and operating practices will not be affected”.
- 1.2.6 Given the “Current Generating” operations at Ladore and John Hart Generating Stations, has any operating parameters changed that supports a reduction in the Lower Campbell Reservoir levels dropping by the cessation of operations at the Salmon River Dam by 4%. This “IR” basically requires better clarification of Section 2.5 – Energy Contribution, pages 21 and 22 of 42
- 1.2.7 Will BC Hydro please tabulate Section 2.5.1 – Value of Diversion Energy. What I tried to produce from this section did not make sense, could not identify “levelized value of the Reference Price”, “gross value in present value terms”, then “gross energy value in present value terms” I know BC Hydro is trying to make a point, but it is lost in this section.

- 1.2.8 If there are no changes in operations, is it BC Hydro's position that by ceasing operations at the Salmon River diversion and dam, the reduction (loss) of 4% inflows into the Lower Campbell River is of no "Long Term" operating concerns to the Ladore and John Hart Generating Stations.

1.3 **Salmon**

- 1.3.1 Will BC Hydro please clarify, quote: "The downstream fish screen installed in the Canal operates poorly and at a low efficiency".²

"Fish screen efficiency is the percentage of fish approaching the screen that are deflected by the screen, without impingement or entrainment. Fish that impinge on the screen are subject to scale loss or damage to fins, and will be at higher risk of latent mortality".

How did the downstream fish screen installed presumably in 1957/58 come to operate at a low efficiency. What is efficient? Please provide some parameters to evaluate as they are applicable to the Salmon River and this location.

- 1.3.2 Will BC Hydro please provide background on the original efficiencies of the design and how the deterioration occurred, presumably over the years. Perhaps a table that relates to, quote: "The function of the screen is to return entrained fish (both adults and out-migrating salmon smolts) that have been drawn into the Canal back to the Salmon River".

- 1.3.3 Intervener Background:

- 1.3.3.1 From the perspective of being an intervener, the following quote from page 2 of 42 is most disturbing and off-hand-dish of BC Hydro "Project Wise"

"Maintaining the status quo of patchwork repairs or abandoning the works are not feasible alternatives to address these issues. BC Hydro initiated a project to consider alternatives to address these identified issues in July 2013. In the course of advancing this project, BC Hydro determined that the benefits of reinvesting to rehabilitate the Diversion did not weigh favorably in comparison to the ceasing of operations when considering the costs and benefits inclusive of ecological impacts and has taken a operation".

It suggests BC Hydro has taken a pragmatic dollar for dollar return approach to discontinuing / maintaining operations at this location. While all along 1957/58 the Salmon have been "impinged" by the installed screen at this location. There seems very little concern by BC Hydro to "Reinvesting to Rehabilitate the Diversion" or even maintain / upgrade to modern standards. A rather selfish management approach.

- 1.3.4 With the aforesaid, will BC Hydro please provide comparative tables between cost savings by ceasing operations versus costs to upgrade to modern river diversion standards with screens. Please include ongoing forecasts of operating costs for the next 25 years, while maintaining water flows at 4%. This "IR" notes Table 1 Removal Costs and Table 2 Rehabilitation Costs. (emphasis added).

- 1.3.5 What roll if any did the Campbell River Projects Water Use Plan Physical Works Terms of Reference Addendum 1 dated August 4, 2015 •JHTWORKS-6 Salmon River Diversion Juvenile Fish Screen Upgrade, play in the determinations of alternatives considered by BC Hydro for this application.

reference <https://www.bchydro.com/content/dam/BCHydro/customer-portal/documents/corporate/environment-sustainability/water-use-planning/vancouver-island/jhtworks-6-terms-of-reference-addendum-1-2015-08-04.pdf>

- 1.3.6 To which "Ratepayers" account did the A2.5 Budget Total Revised Program Cost: \$795,861 finally end up.

1.4 COSTS

- 1.4.1 Taking into consideration to IR 1.3.4 above, will BC Hydro please restate in revised reformatted tables, Table 3 Rehabilitation – Cost of Energy, and Table 4 Net Present Value at Reference Price, and Table 5 Net Present Value at Lower Price 6 (Sensitivity), that include the plus 50% to – 15%.
- 1.4.2 Then will BC Hydro please restate the entire Section 4.1 - Economics with the hi/lo respective numbers given from the above referenced tables.
- 1.4.3 On page 34 of 42, lines, 7 to 12, quote:

“While deferral or avoidance of decommissioning cost is relevant in a capital decision, BC Hydro believes it is a weak rationale when the underlying economics are marginal. Rehabilitation of the Diversion is not the best use of capital given BC Hydro’s capital spending is constrained by the 10 Year Rates Plan. It will divert resources from other, more critical projects that will provide greater benefits for the resources applied”.

Will BC Hydro please place in context of the above quote there definitions of 1.0 or less than 1.0, as given in Tables 4 & 5 Benefit/Cost Ratio, net of Decommissioning Credit. How are these ratios mathematically or otherwise determined.

Footnote Quote: “23 Benefit/Cost ratio compares the costs and benefits of a capital project: a ratio of less than 1.0 indicates that the project destroys value, while a ratio greater than 1.0 indicates that a project creates value. Higher values indicate that the value creation is more robust, and is thus more likely to survive adverse cost, schedule, or market variation”.

It is noted that BC Hydro has not included any Salmon, Environmental, or Social sensitivities in these capital costs or Benefit/Cost Ratios. It would have been informative to see a tabulation of the factors versus capital costs. As sometimes BC Hydro having harmony with Salmon, Environmental and Social as aspects have a lasting valuation on the community over the capital costs. It’s called a Corporate Social Responsibility.

2.0 Financial Treatment

- 2.1 Will BC Hydro please make a clear statement for this application what is meant by, quote:

“BC Hydro believes that the costs of the cease operation and removal alternative will be eligible to be recorded in the Dismantling Cost Regulatory Account and be recovered from ratepayers over the next test period (as per the recovery mechanism for the Dismantling Cost Regulatory Account proposed by BC Hydro)”. (underlined for focus)

Which Test Period ? F2017 to F2019 or some other Test Period.

For context in this application, I have copied BC Hydro’s application as given below.

BC Hydro F2017 – F2019 RRA, Chapter 7 - Deferral and Other Regulatory Accounts, quote:

“With this application BC Hydro requests the following:

- The Future Removal and Site Restoration Regulatory Account be renamed the Dismantling Cost Regulatory Account;
- The terms of the account be changed so that the account defers, on an annual basis, any variances between planned and actual dismantling costs, to be effective starting in fiscal 2017. Deferral of the variances between planned and actual dismantling costs aligns with the criteria for deferral of costs discussed in section 7.3. Actual dismantling costs are subject to a number of non-controllable events

2.1 continued:

such as project schedule changes and cost variances, and therefore could differ materially from plan in a given year;

- Interest will be applied to balances in the account, consistent with the application of interest to other variance accounts, based on BC Hydro’s current weighted average cost of debt; and
- On an ongoing basis, the forecast account balance at the end of a test period is to be recovered over the next test period.”

Table 7-9 Summary of Regulatory Account Orders Requested by BC Hydro in Fiscal 2017–F2019 Revenue Requirements Application

	Account	Requested Changes to Account Scope	Requested Changes to Recovery Mechanism	Requested Changes to Interest
19	Future Removal and Site Restoration Regulatory Account	<ul style="list-style-type: none"> • The Future Removal and Site Restoration Regulatory Account be renamed the Dismantling Cost Regulatory Account. • The terms of the account be changed so that the account defers, on an annual basis, any variances between planned and actual dismantling costs, to be effective starting in fiscal 2017. 	<ul style="list-style-type: none"> • On an ongoing basis, the forecast account balance at the end of a test period is to be recovered over the next test period. 	<ul style="list-style-type: none"> • Interest will be applied to balances in the account, consistent with the application of interest to other variance accounts, based on BC Hydro’s current weighted average cost of debt.

- 2.2 In the event the Commission grants approval to cease operations, and also approve the costs given in this application be recorded to the Dismantling Cost Regulatory Account, 1). What is the duration of these costs within the DCRA. 2).do these cost include interest, and at what rate.
- 2.3 How will the final cost of this application be transferred to the Ratepayer, BC Hydro’s customers.
- 2.4 Will BC Hydro please explain in the event the Commission does not grant BC Hydro’s request to record this application cost to the DCRA, how is this project eligible to be recorded in the Heritage Deferral Account and recovery by way of the Deferral Account Rate Rider.
- 2.5 Currently within BC Hydro’s Water Reservoir resources, what other comparable projects / operations like this Salmon River Diversion /Dam are included in the Heritage Deferral Account.
- 2.6 What will BC Hydro do if the Commission does not approve the recording of this application costs to either the Dismantling Cost Regulatory Account, or Heritage Deferral Account for recovery by way of the Deferral Account Rate Rider. Can BC Hydro provide options or alternatives, please specify them.
- 2.7 During the life cycle of the Salmon River Diversion, Dam, and Canal, has BC Hydro amortized the asset costs of all the major / minor components into the “Rate Base”. If so, please elaborate with a Table of Assets and Asset Classes that are impaired, not impaired or otherwise. For example, please refer to their Table in their F2017-to F2019 RRA for the Burrard Facility.