



British Columbia
Utilities Commission

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VIA EMAIL

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March 10, 2016

**BC HYDRO W.A.C. BENNETT
RIPRAP UPGRADE PROJECT EXHIBIT A-10**

Mr. Tom A. Loski
Chief Regulatory Officer
BC Hydro and Power Authority
333 Dunsmuir Street
Vancouver, BC V6B 5R3

Dear Mr. Loski:

Re: British Columbia Hydro and Power Authority
W.A.C. Bennett Dam Riprap Upgrade Project

Further to your November 13, 2015 filing of the above noted application and the Regulatory Timetable revised in British Columbia Utilities Commission Order G-31-16, enclosed please find Commission Information Request No. 2. In accordance with the Regulatory Timetable, please file your response no later than Thursday, April 7, 2016.

Please note that the Commission has modified its practice with respect to numbering information requests. We will apply continuous numbering through rounds of IRs for ease of reference later in the proceeding, to avoid duplicate or similar numbering. We ask that you make note of the continuous numbering and identify responses accordingly.

Yours truly,

Original signed by:

Laurel Ross

JR/dg

Enclosure

cc: Registered Interveners

**British Columbia Hydro and Power Authority
W.A.C. Bennett Dam Riprap Upgrade Project**

**28.0 Reference: W.A.C. BENNETT DAM DESIGN AND CONDITION
Exhibit B-1-4, Sections 3.7, 7.2.4, 7.2.10, 7.2.11; Exhibit B-3, BCUC IR 2.7
Dam status and risk**

The 2012 report issued by the Expert Engineering Panel (EEP), notes that the upper part of the dam may be vulnerable to internal erosion through concentrated cracks when the reservoir level is high. The EEP recommends that the three issues, rip-rap repair, seismic resistance, and vulnerability to cracking and internal erosion be considered simultaneously to produce a solution that addresses the three identified risks to the upper part of the dam.¹ To better understand the risks the EEP recommends investigations into seismic stability² and cementation of the high carbonate fines in the dam.³

In response to BCUC information request (IR) 2.7, item 4 under Future Projects, British Columbia Hydro and Power Authority (BC Hydro) provides the following summary of future seismic upgrade work:

Dam and Related Structures – seismic upgrade: Scope still to be determined.

Forecast Capital Cost: To be determined

Schedule: To be determined

Risk or dam safety implication to riprap project: To be determined

A December 11, 2015 public letter from BC Hydro's director of dam safety states that:

In its 2012 report, the [Expert Engineering] Panel notes that the Bennett dam design will prevent ongoing internal erosion and that there are no situations where erosion, if initiated, would continue. The Panel recommended quite a number of further investigations and work to confirm this conclusion, including additional studies for the upper portion of the dam.

Since that time, we have been addressing the Panel's recommendations, and the Expert Engineering Panel was reconvened just last month to assess our progress, and reassess the situation. This latest report is still in draft, and should be available early in 2016.

In the meantime, based on their verbal update, we expect the report to state that the work over the past three years confirms their earlier opinion regarding the safety of the dam. We also expect to receive recommendations for further work, which we will continue to follow.

The process of monitoring and surveillance, and the review of the dam's performance will also continue, as this work is the cornerstone of our dam safety program that ensures its ongoing safe performance. The Expert Panel follow-up report will be made public after it is received and formally submitted to the Comptroller of Water Rights.⁴

¹ Exhibit B-1-4, sections 3.7 and 7.2.11.

² Ibid., section 7.2.10.

³ Ibid., section 7.2.4.

⁴ https://www.bchydro.com/news/press_centre/news_releases/2015/dam-safety-update.html

- 28.1 When does BC Hydro expect to finalize and submit the new EEP report to the Comptroller of Water Rights?
- 28.1.1 Please provide a copy of the following from the draft 2015 EEP report as originally provided to BC Hydro by the EEP: the executive summary; recommendations (if not provided in the executive summary); and any sections that cover the damage to upstream slope and required repair to the top part of dam or the evaluation of dam performance and safety.
- 28.2 Has BC Hydro conducted an investigation into the possible cementation of the high carbonate fines as recommended by the EEP? If yes, what is the investigation outcome and corresponding current recommendation of the EEP? If not, why not?
- 28.3 Has BC Hydro conducted an investigation into the seismic stability of the dam in the manner recommended by the EEP? If yes, what is the investigation outcome and corresponding current recommendation of the EEP? If not, why not?
- 28.4 Does BC Hydro view seismic resistance and vulnerability to cracking and internal erosion as issues that require mitigation? If not, please explain. If yes, could this mitigation be done more efficiently simultaneously with the Riprap mitigation?
- 28.5 Are there any identified risks to the dam other than previously identified in the Application and in the responses to IRs (Exhibit B-3) for which mitigation measures have been considered?
- 28.6 What risk mitigation measures have been considered for the seismic upgrade project identified in BCUC IR 1.2.7? Describe the solutions and identify any cost, schedule, risk or dam safety implications to the Riprap project.
- 28.7 Does BC Hydro consider the Riprap project “a solution that addresses the three identified risks to the upper part of the dam?” If not, explain why it would be prudent to proceed with the project at this time instead of addressing the risks simultaneously as recommended by the EEP?