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British Columbia Hydro and Power Authority

Salmon River Diversion Ceasing of Operations

Decision
and Order G-96-17

June 16, 2017

Before:
W.M. Everett, QC, Panel Chair
B.A. Magnan, Commissioner
R.D. Revel, Commissioner

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Executive summary

On March 7, 2017, British Columbia Hydro and Power Authority (BC Hydro) filed an application (Application) with the British Columbia Utilities Commission (Commission) under section 41 of the *Utilities Commission Act*, for permission to permanently cease operations and decommission the Salmon River Diversion facility (Diversion). BC Hydro also requests permission to transfer the costs incurred to cease operations and decommission the Diversion into a Dismantling Cost Regulatory Account (DCRA). BC Hydro is requesting approval of the DCRA in its Fiscal 2017 to Fiscal 2019 Revenue Requirements Application (RRA), and that proceeding is being considered by another panel.

The Diversion, located in central Vancouver Island, was built in 1957–1958. It redirects a portion of the water flow from the Salmon River through an approximately 3 km long canal (Canal) to an unnamed pond and then through an improved natural channel to Brewster Lake, where it enters the Lower Campbell Reservoir and is used to augment generation at the Ladore and John Hart generating stations.

The Panel considered the condition of various components of the Salmon River Diversion and found a need and justification to address the deteriorating condition of the timber-crib dam and spillway (Dam), the Patterson Creek flume (Flume) and Canal and, in light of BC Hydro's commitments to improve fish passage as part of the Water Planning process and under an impact benefits agreement with First Nations, a need to address the fish screen and fishway performance.

The Panel considered various alternative approaches to address the condition of the Dam, Flume, Canal, fish screen and fishway as put forward by BC Hydro, interveners and Commission staff, and determined that the Cease Operations and Decommission or Rehabilitation alternatives were the most viable. The Panel found that the economics of these two alternatives are similar in their ratepayer impacts and then considered the environmental factors and local community and First Nations support. The Panel determined that the Cease Operations and Decommission alternative was the most appropriate approach to address the condition of the Diversion and granted BC Hydro permission to cease operations and decommission as set out in the Application.

Next, the Panel turned its attention to the proposed accounting treatment for the costs to Cease Operations and Decommission the Diversion. The Panel found that, in the event the DCRA is approved in the RRA proceeding, BC Hydro may transfer the costs incurred to Cease Operations and Decommission the Diversion into the DCRA, consistent with the terms approved for that account in the RRA proceeding. However, in the event that the DCRA is not approved as filed, the Panel did not agree, at this time, that BC Hydro should be allowed to recover these costs in future rates by allowing them to be included in any alternate regulatory account. The Panel did not find there to be anything special or unique that would warrant alternate treatment from the general dismantling costs treatment that will be determined in the RRA.

BC Hydro was directed to file reports within six months of substantial completion of the Cease Operations and Decommission work, and after obtaining the Certificate of Compliance issued by the Ministry of Environment.

1.0 Introduction

1.1 Approvals sought

On March 7, 2017, British Columbia Hydro and Power Authority (BC Hydro) filed an application (Application) with the British Columbia Utilities Commission (Commission) under section 41 of the *Utilities Commission Act* (UCA), for permission to permanently cease operations and decommission the Salmon River Diversion facility located on Vancouver Island (Salmon River Diversion or Diversion) (Project).[1]

The Salmon River Diversion was built in 1957–1958 and is located in central Vancouver Island about 30 km west of Campbell River. The Diversion redirects a portion of the water flow from the Salmon River through an approximately 3 km long concrete-lined canal (Canal) to an unnamed pond and then through an improved natural channel to Brewster Lake, from which it enters the Lower Campbell Reservoir where it is used to augment generation at the Ladore and John Hart generating stations.

BC Hydro also requests permission to transfer the costs incurred to cease operations and decommission the Diversion into the Dismantling Cost Regulatory Account (DCRA), which is a regulatory account that BC Hydro has requested approval for in its Fiscal 2017 to Fiscal 2019 Revenue Requirements Application. If BC Hydro's request for the DCRA is not approved, then BC Hydro requests permission to transfer these costs to the Heritage Deferral Account (HDA) or the Non Heritage Deferral Account (NHDA).

1.2 Interveners

Roy Bishop (Bishop), Richard Landale (Landale), Commercial Energy Consumers Association of British Columbia (CEC), and British Columbia Old Age Pensioners' Organization, Active Support Against Poverty, Disability Alliance BC, Council of Senior Citizens' Organizations of BC, Together Against Poverty Society, and the Tenant Resource and Advisory Centre (collectively BCOAPO) registered as interveners in this proceeding.

1.3 Regulatory process

This proceeding was conducted in writing and included one round of information requests (IRs), responses and arguments. BC Hydro filed its final argument on May 12, 2017. On May 18, 2017, Landale filed his final argument and on May 19, 2017, Bishop, CEC and BCOAPO each filed their final arguments. BC Hydro filed its reply argument on May 26, 2017.

1.4 Legal framework

1.4.1 Clean Energy Act

Section 14 of the *Clean Energy Act* (CEA) prohibits the sale or disposal of heritage assets, unless they are no longer used or useful, or are to be replaced with one or more assets that will perform similar functions. For th is reason, the Panel must first consider whether the Salmon River Diversion is a heritage asset. Heritage assets are defined by the CEA to include BC Hydro's interests in the generation and storage assets identified in Schedule 1 of the CEA. Schedule 1 does not identify the Salmon River Diversion as a generation and storage asset. However, Schedule 1 does identify John Hart and Ladore as generation and storage assets.

[1] Exhibit B-1.

The CEA also refers to BC's Energy Objectives, which include the provision to ensure that BC Hydro's ratepayers receive the benefits of the heritage assets.[2]

The Salmon River Diversion, built in 1957–1958, redirects a portion of the water flow from the Salmon River to the Lower Campbell Reservoir where it is used to augment generation at the Ladore and John Hart generating stations.[3] The energy contribution of the Diversion to the Campbell River Hydroelectric System is approximately 46GWh. BC Hydro expects that 71 per cent of the energy loss will be offset by the 33 GWh increase in efficiency expected from a redeveloped John Hart generating station.[4] In response to an IR from CEC, BC Hydro confirms that the efficiency improvements being implemented at the John Hart generating station are scheduled to occur regardless of whether the Diversion is decommissioned and that decommissioning the Diversion represents a net loss of approximately 46 GWh annually that would not occur if it were not decommissioned.[5]

BC Hydro, in response to IRs, submits that the Salmon River Diversion is not a heritage asset because the 'Salmon River Diversion' is not specifically listed in Schedule 1 to the CEA. BC Hydro confirms that the Salmon River Diversion is currently used and useful and is also part of the Campbell River Hydroelectric System (System). That System includes three BC Hydro generation and storage assets (John Hart, Ladore and Strathcona) which are all identified in Schedule 1 of the CEA as heritage assets. However, BC Hydro submits that the System is not a heritage asset and the Salmon River Diversion cannot be interpreted to be a heritage asset on the basis it is a part of that System.[6]

In its final argument, BC Hydro reiterates its position that the Diversion is not a heritage asset and therefore the prohibition under section 14 of the CEA against disposal does not apply.[7]

Intervener arguments

CEC accepts that there is no statutory prohibition against the disposition of the Salmon River Diversion assets in the CEA. However, CEC further submits that the Diversion contributes energy to the John Hart and Ladore generating stations, both of which are identified in Schedule 1 of the CEA as heritage assets with prohibitions against disposition under the CEA. CEC submits that it could be appropriate for the Commission to take a broad view of the intent of the legislation in preserving the energy generation of the John Hart and Ladore generating stations. CEC recommends that the Commission factor this into its deliberations as part of its determination of the public interest. CEC also notes, however, the Commission could determine the Salmon River Diversion is not a heritage asset.[8]

BC Hydro reply

In reply to CEC, BC Hydro submits that if the fact that section 14 of the CEA does not apply to the Application to cease operations and decommission the Salmon River Diversion has any relevance to the Commission's determinations, then it should weigh in favour of approving the Application on the basis that the legislature chose not to invest the Salmon River Diversion with the protected status of a "heritage asset".[9]

[2] *Clean Energy Act*, Section 2 (e).
[3] Exhibit B-1, p. 1.
[4] Exhibit B-3, BCUC IR 1.13.5.
[5] Exhibit B-4, CEC IR 1.1.1, 1.1.1.1.
[6] Exhibit B-3, BCUC IR 1.5.
[7] BC Hydro Final Argument, p. 18.
[8] CEC Final Argument, p. 2.
[9] BC Hydro Reply Argument, p. 3.

Commission determination

The decision regarding whether or not the Diversion is a heritage asset is an important one. If the Salmon River Diversion is a heritage asset, section 14 of the CEA prevents BC Hydro from disposing of it, unless it is not used and useful, or is to be replaced with one or more assets that will perform similar functions. If the Diversion is not a heritage asset, or is a heritage asset that is no longer used or useful or is to be replaced with one or more assets that will perform similar functions, then the Panel may consider this Application on its merits.

The Panel notes BC Hydro's submissions that the Salmon River Diversion is currently used and useful, is part of the Campbell River Hydroelectric System, and contributes energy to John Hart and Ladore generating stations, both of which are identified in Schedule 1 of the CEA as heritage assets with prohibitions against disposition.

Based on the evidence provided, the Panel finds that section 14 of the CEA limits heritage assets to the generation and storage assets identified in Schedule 1 of the CEA and cannot be interpreted so broadly as to include the Salmon River Diversion as a heritage asset merely by association with other BC Hydro generation and storage heritage assets on the Campbell River Hydroelectric System. Further, the Panel finds that by not expressly identifying the Salmon River Diversion in Schedule 1 of the CEA, the legislature did not intend to include it as a generation and storage heritage asset. Therefore, the Panel finds that section 14 of the CEA does not restrict BC Hydro from disposing of the Salmon River Diversion assets.

1.4.2 *Utilities Commission Act* - Section 41

Section 41 of the UCA does not allow BC Hydro to discontinue operations of the Salmon River Diversion without first obtaining permission from the Commission. Specifically, section 41 of the UCA is written as follows:

> **No discontinuance without permission**
>
> 41. A public utility that has been granted a certificate of public convenience and necessity or a franchise, or that has been deemed to have been granted a certificate of public convenience and necessity, and has begun any operation for which the certificate or franchise is necessary, or in respect of which the certificate is deemed to have been granted, must not cease the operation or a part of it without first obtaining the permission of the commission.

Unlike some other sections of the UCA, section 41 does not include the factors the Commission must consider in determining whether or not to grant permission to cease operations. As such, interveners and Commission staff asked IRs regarding potential public interest considerations. In particular, CEC asked for BC Hydro's views as to the appropriate factors and weightings that the Commission should consider in weighing the public interest. In response, BC Hydro explained that the Commission should consider factors similar to the factors considered in Certificate of Public Convenience and Necessity (CPCN) applications and the relative weight of such factors should be determined in light of the circumstances of the specific project. As the potential alternatives considered for the Salmon River Diversion have very similar economic consequences, BC Hydro submits that the Commission should give significant weight to the non-economic factors including the significant environmental benefits of the proposed Project and the strong support from stakeholders including First Nations. [10]

In its Final Argument BC Hydro submits:

> …a section 41 process is effectively the converse of a CPCN process: rather than seeking the Commission's permission to dedicate property to public utility service, it seeks the Commission's permission to remove property from the utility service. For these reasons, the scope of factors, and their relative weights, that can be brought to bear in a section 41 proceeding are similar to those that can be brought to bear in a CPCN proceeding… although economic factors inform

[10] Exhibit B-4, CEC 1.17.2.

consideration of an application, BC Hydro submits that in a section 41 proceeding in which project alternatives have very similar economics, as in the instant case, it is appropriate and indeed proper for the Commission to give significant weight to non-economic factors including, most particularly, stakeholder support for the alternative with the most attractive environmental, social and First Nation attributes.[11]

Intervener arguments

CEC and BCOAPO essentially agree with BC Hydro, that considerations in respect of section 41 evaluations are similar to considerations for CPCN applications, and where the economics of alternatives are similar, environmental and social factors should be considered.[12] CEC also suggests the relative weights the Commission should apply to these and other factors in its assessment of the Application.[13] Landale does not refute BC Hydro's view of placing weight on non-economic factors.[14]

BC Hydro reply

In its reply argument, BC Hydro submits that it does not think there is a great deal of value in the more granular approach advocated for by CEC. BC Hydro argues that identifying and weighing discrete elements of the cost effectiveness test beyond the high-level economic/non-economic distinctions BC Hydro has drawn, risks giving those elements more significance than they can lawfully bear, particularly in the more usual project approval proceeding where economic considerations would properly dominate the cost-effectiveness assessment.[15]

Panel discussion

The Panel agrees with BC Hydro, CEC and BCOAPO that factors similar to a CPCN application should be considered and weighed in reviewing a section 41 application. It is the Panel's view that in proceedings in which project alternatives have very similar economics, environmental and social factors should be considered and weighed. The Panel is of the view the specific factors and relative weighting depend on the unique circumstances of each application.

2.0 Need and justification

In this section the Panel will consider the need and justification of BC Hydro's Application to cease operations and decommission specific components of the Salmon River Diversion, including the timber-crib dam and spillway; the Canal and Patterson Creek flume (Flume); the fish screen; and the fishway.

2.1 Timber-crib dam and spillway

BC Hydro submits that the timber-crib dam and spillway (Dam) is in poor condition, as the upper structural timbers and spillway facing boards are deteriorating due to rot.[16] However, BC Hydro explains that the Dam is a low consequence dam under the B.C. Dam Safety Regulations and provides little risk in the event of failure. That said, BC Hydro is of the view that the reputational consequences of failure are considered high.[17]

[11] BC Hydro Final Argument, pp. 3, 5.
[12] BCOAPO Final Argument, pp. 8–9; CEC Final Argument, p. 2.
[13] CEC Final Argument, pp. 3, 4, 5, 14, 15, 16.
[14] Landale Final Argument, pp. 1–5.
[15] BC Hydro Reply, p. 3.
[16] Exhibit B-1, p. 5.
[17] Exhibit B-1, p. 15.

To support its initial condition assessment, BC Hydro cites inspection reports from 2011, 2014 and 2015. All three reports indicated deterioration of the condition of the Dam with a need to invest in remediation if the Dam were to continue in operation. Some reports elaborated that the spillway meets standards for stability and can pass a major flood. However, given the current condition of the structure, it is likely that at least some damage would occur.[18]

In response to Commission IRs, BC Hydro explains that the issues noted in the inspection reports have not yet been addressed, as a capital project was expected to start in the near future which would have addressed the issues.[19]

In its final argument, BC Hydro reiterates its position that it must act to address the physical condition of the Dam. It repeats its concerns regarding the facing boards, the structural timbers holding the facing boards, erosion, increasing dam safety risks at higher flows, the scour hole, as well as the environmental, reputational and financial consequences of a failure.[20]

2.2 Canal and Flume

BC Hydro submits that the Canal is in poor condition as the concrete liner is deteriorating. Spalling, cracking, holes in the concrete, and voids under the concrete have all been observed. BC Hydro explains that the Canal has been repaired to allow a temporary return to service but at less than design capacity and further work remains to maintain operation over the long term. Following repairs in 2014, the Canal was considered to be in fair to poor condition and the Canal was returned to service with a flow limitation of 15 m^3/s.[21]

In respect of the Flume, a component of the Canal, BC Hydro notes that some members of the substructure and approximately half the framing in the superstructure must be replaced.[22]

In support of its assessment, BC Hydro quotes the 2014 report filed in Appendix E (AE Report).[23] The report explains that the Flume will likely need replacement within 10 years. However, with some repairs, it could be maintained for at least 20 years if the flow does not exceed 15 m^3/s.[24] In addition, the report lists a series of items that require immediate attention, including work on the Canal concrete liner, lateral drains, culverts and underdrains.[25] In response to IRs, BC Hydro confirms that it has not undertaken any of this work as a comprehensive rehabilitation was under consideration and undertaking that work may have increased re-work and overall costs.[26] BC Hydro also confirms that the 15 m^3/s flow limitation is not only due to the condition of the timbers in the Flume and the condition of the concrete Canal liner, but also the operability of the downstream fish screen.[27]

2.3 Fish screen

The fish screen was installed in the Canal in 1986 by the BC Ministry of Environment to return fish in the Canal back to the Salmon River. It has been maintained and operated by BC Hydro since that time.[28]

[18] Exhibit B-1, pp. 9–10.
[19] Exhibit B-3, BCUC IR 1.1.1.
[20] BC Hydro Final Argument, pp. 6–7.
[21] Exhibit B-1, pp. 5, 13-14.
[22] Exhibit B-1, p. 5.
[23] Exhibit B-1, Appendix E.
[24] Exhibit B-1, p. 14.
[25] Exhibit B-1, Appendix E, p. 3-1.
[26] Exhibit B-3, BCUC IR 1.2.1.
[27] Exhibit B-3, BCUC IR 1.2.4; Exhibit B-4, BCOAPO IR 1.2.1; Landale 1.1.2.1.
[28] Exhibit B-1, p. 12.

BC Hydro submits that the fish screen does not operate reliably and that it is required by the Campbell River Water Use Plan and the associated Order of the Comptroller of Water Rights (Comptroller) to make improvements.[29] BC Hydro explains that the Comptroller ordered BC Hydro to improve the fish screen to be operational at flows up to 30 m^3/s and until those improvements are in place the maximum diversion flow permitted while the screen is in operation is 15 m^3/s.[30]

BC Hydro explains that the fish screen is in satisfactory physical condition, but fails to perform effectively.[31] It is undersized and prone to debris buildup, which can cause it to trip out of position, particularly at higher flow rates. It was originally designed to operate to at least 80 per cent efficiency for diversion rates up to 42.5 m^3/s. However, it is only effective when clean and at flow rates of 15 m^3/s or less. Otherwise the screen 'skips' off the bottom of the Canal and allows fish to bypass the screen. In addition, the fish screen forces smolts to the bottom of the Canal, when their natural tendency is to be nearer the surface. It can also cause direct mortality on impingement, as well as physical harm such as scale loss, or fin damage leading to some level of latent mortality.[32]

In response to IRs, BC Hydro also explains that the Salmon River Diversion Fish Passage Consultative Committee recommended improvements to the performance of the fish screen to improve fish productivity.[33] That committee includes Fisheries and Oceans Canada (DFO), as well as BC Hydro, stakeholders and First Nations.[34] In addition, BC Hydro confirms that the efficiency of the screen has not decreased since installation in 1986.[35]

BC Hydro explains that due to the environmental concerns when the fish screen is in operation, it is now checked daily by a contractor and weekly or monthly by BC Hydro. Both BC Hydro and the contractor re-set the screen if they find it forced out of position. The contractor also flushes the screen if debris builds up.[36]

2.4 Fishway

In its Application, BC Hydro explains that the upstream fishway at the Dam does not operate effectively. As such, BC Hydro committed to working with First Nations to identify and implement fishway improvements to be completed in the 2015 timeframe.[37] BC Hydro also explains that the upstream fishway was added to the Diversion in 1992 by the DFO, but has been maintained by BC Hydro since that time. The concrete is in satisfactory condition but the fishway fails to perform effectively.[38] The problems have been with debris control, Canal radial gate operations, and lack of attraction flows.[39] It notes that the Water Use Planning process identified upstream fish passage at the Diversion as a concern. As a part of that process, a consultative committee was formed that recommended improving the fish passage and subsequently BC Hydro committed to making improvements under its capital program.[40]

[29] Exhibit B-1, p. 5.
[30] Exhibit B-1, p. 19.
[31] Exhibit B-1, p. 12.
[32] Exhibit B-1, pp. 17–18.
[33] Exhibit B-4, Bishop IR 1.2.4.2.1.
[34] Exhibit B-4, Bishop IR 1.2.4.2.1; Exhibit B-1, p. 20.
[35] Exhibit B-4, Landale IR 1.1.3.1.
[36] Exhibit B-3, BCUC IR 1.3.14.
[37] Exhibit B-1, pp. 5–6.
[38] Exhibit B-1, pp. 11, 12.
[39] Exhibit B-1, pp. 19, 20.
[40] Exhibit B-1, pp. 20, 21.

BC Hydro also explains that:

> [As] part of the Impact Benefits Agreements with We Wai Kai and Wei Wai Kum for the John Hart Upgrade Project (signed in 2012), BC Hydro committed to (a) co-manage the decision making process with BC Hydro to identify an upstream fish passage solution for Salmon River, and subject to reasonable funding by BC Hydro, (b) to work together to implement the fish passage solution at the Salmon River Diversion.[41]

There are no orders or regulations that require BC Hydro to improve fish passage at the Diversion.[42] In response to an IR, BC Hydro clarifies that the Campbell River Water Use Plan does not specify any upstream fish passage requirements at the Diversion and confirmed that the decision whether, and to what extent, the upstream fish passage should be improved is a decision to be made by BC Hydro in light of expectations for environmental performance or commitments to third parties.[43] However, BC Hydro explains that maintaining the status quo of the fishway does not address the commitments it has made to First Nations regarding upstream fish passage.[44]

BC Hydro's arguments on need and justification

In its final argument BC Hydro repeats that it must act to address the physical condition of the Dam. It reiterates its concerns regarding the facing boards, the structural timbers holding the facing boards, erosion, increasing dam safety risks at higher flows, the scour hole, as well as the environmental, reputational and financial consequences of a failure.[45]

BC Hydro also repeats that the Canal is deteriorating and inspections have indicated areas of spalling, cracking, holes along the length of the Canal, as well as voids under the concrete. In addition, it submits that the Flume has shown rot in its timber substructure and frame, and replacement of the Flume is likely needed within a ten-year horizon. However, it notes that partial replacement of timber substructure and framing could extend the life of the Flume to 20 years if flows are limited to 15 m^3/s.[46]

In addition, BC Hydro details why the fish screen has not been working effectively. It explains that the screen is undersized and prone to debris build-up. At higher flows and when clogged by debris the screen is forced out of position it allows fish to continue down the Canal into the Campbell River system. BC Hydro submits that even during normal operation, the screen causes fish impingement and mortality.[47]

In terms of the upstream fishway, BC Hydro explains that it is not effective as it fails to meet design targets. Among other deficiencies, it fails to attract fish due to flow differentials and a narrow entrance.[48]

BC Hydro also reiterates that it has made commitments to improve fish passage as part of the Water Use Planning process and under an impact benefits agreement and, as such, seeks to advance the Project as soon as practicable.[49]

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[41] Exhibit B-3, BCUC IR 1.4.4.
[42] Exhibit B-3, BCUC IR 1.4.6.
[43] Exhibit B-3, BCUC IR 1.4.3.
[44] Exhibit B-1, p. 24.
[45] BC Hydro Final Argument, pp. 6–7.
[46] BC Hydro Final Argument, p. 7.
[47] BC Hydro Final Argument, p. 8.
[48] BC Hydro Final Argument, p. 9.
[49] BC Hydro Final Argument, pp. 9–10.

Intervener arguments on need and justification

CEC submits BC Hydro has provided reasonable evidence of significant deterioration of the Diversion, and notes there is some urgency for the repairs as demonstrated by the AE report recommending changes within five years, or by 2019. CEC recommends that the Commission weigh this evidence heavily in its assessment of the need for a project at this time.[50] CEC also submits that BC Hydro has outlined a need to address the fish screen and fishway issues at the present time. It recommends that the Commission apply moderate weight to the issue of fish passage in its assessment of project need.[51]

BCOAPO concurs with BC Hydro's conclusions that maintaining the status quo does not address the condition of the Dam and does not address the commitments made to First Nations regarding upstream fish passage. It accepts that some action is required.[52]

Bishop notes that BC Hydro's fish passage commitments are not a must do, but one subject to reasonable funding by BC Hydro.[53]

Commission determination

The Panel has reviewed the evidence and arguments and finds that there is a need and justification to address the condition of the Dam, Flume and Canal. BC Hydro has provided results of inspections which identify rot in the Dam timbers and degradation of the Canal and Flume that require remediation. **The Panel also finds that there is a need to address fish screen and fishway performance as BC Hydro has made commitments to improve fish passage as part of the Water Use Planning process and under an impact benefits agreement with First Nations.** Failure to meet these commitments could lead to reputational impacts which could lead to financial impacts. The Panel notes that these commitments are subject to reasonable funding constraints.

3.0 Alternative approaches to address the condition of the Diversion

In this section, the Panel will consider alternative approaches to address the condition of the Dam, Flume, Canal, Fish Screen and Fishway and determine which alternatives are appropriate for detailed analysis.

In its Application, BC Hydro examines four alternatives: i) maintain the status quo (Status Quo), ii) Cease Operations and Abandon, iii) cease operations and decommission, by removing portions of existing assets (Cease Operations and Decommission or Project), and iv) rehabilitation of the Diversion (Rehabilitation).

Two of these alternatives, Status Quo and Cease Operations and Abandon, are immediately dismissed by BC Hydro. BC Hydro explains that the Status Quo alternative would involve simply continuing the operation of the Diversion in its current state and under existing conditions, while making periodic minor repairs to the facing boards as required. However, BC Hydro explains that this alternative would not address the cribbing condition of the Dam, the condition of the Flume, the Canal concrete panels, or the commitments to fish passage. Although the Cease Operations and Abandon alternative would resolve the fish screen issue, BC Hydro submits it would likely make upstream fish passage issues more acute due to increased flows over the Dam. It does not address dam safety issues either. The Dam would continue to deteriorate. BC Hydro does not believe the Comptroller would accept this alternative.[54]

BC Hydro considers two alternatives to be viable: Cease Operations and Decommission and Rehabilitation.

[50] CEC Final Argument, p. 3.
[51] CEC Final Argument, p. 5.
[52] BCOAPO Final Argument, p. 4.
[53] Bishop Final Argument, p. 1.
[54] Exhibit B-1, pp. 24–25.

Cease Operations and Decommission is BC Hydro's preferred alternative and it includes the removal of the Dam and the Flume. It also includes removal of the mechanical equipment located at the Canal headworks and downstream fish screen. The upstream and downstream river bed would be re-graded to provide a natural channel for fish movement. The remainder of the Canal, as well as the civil works at the Canal headworks will remain in place. Creosote timbers and contaminated soil beneath the Dam will be removed and sent for appropriate treatment. [55]

BC Hydro submits that complete removal of the Canal and the civil works at the Canal headworks would be an expensive undertaking which would provide little or no environmental or safety benefit. Wildlife impacts will be managed by retaining the existing fencing and adding some access berms to allow wildlife transit across the Canal and egress from the Canal.[56] BC Hydro also notes that the Project will lower the water level in a discharge pond and work at the discharge pond may be required after decommissioning.[57] However, BC Hydro explains that the Comptroller may require work, such as breaching a dam at the discharge pond. BC Hydro estimates that such work could be undertaken for less than $1 million.[58]

BC Hydro also submits that due to the condition of the Dam and other Diversion components, including the upstream fishway, work at the facility will be required in one to five years. BC Hydro further explains that it is already behind schedule on the commitments for fish passage improvement. Delaying a Commission decision much beyond June 15, 2017, would defer the construction works, by a minimum of one year because of fisheries constraints on in-stream work timing.[59] However, there are no material incremental costs associated with the 2017 construction schedule.[60]

The Rehabilitation alternative would include a dam rebuild, a new upstream fishway with better fish passage conditions, a new more efficient fish screen, Canal improvements, and a new trash rack. BC Hydro submits this option would effect a 20-year life extension and provide for 15m^3/s of flow which is substantially less than the original diversion design flow of 42.5 m3/s. A longer term solution was rejected as BC Hydro submits it would involve replacement of the existing Dam. An option for higher flows was also rejected as BC Hydro submits the higher costs do not outweigh the incremental energy gains. For the Rehabilitation alternative, no improvements would be provided to the Flume.[61] Although a Dam rebuild would effect a 20-year extension, at the end of the 20-year period, BC Hydro submits, the Dam would require extensive reconstruction or replacement.[62] BC Hydro submits that Rehabilitation would extend over three construction seasons.[63]

Interveners and Commission staff explored other alternative approaches to address the condition of the Diversion. These alternatives included, but are not limited to, only addressing the fish screen, only addressing the fishway, operating the Dam to failure, full rehabilitation to allow for up to 30 m^3/s, full Dam replacement, and a scaled back Dam re-timbering. In addition, questions were posed on alternatives put forward in the AE Report, such as a 50-year life extension, and on the value of the option to rebuild the Diversion at a later date.

In BC Hydro's final argument, it submits that the alternate approaches identified by Commission staff and Interveners have been explored and it rejected those approaches for various reasons.[64]

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[55] Exhibit B-1, pp. 25, 26, 36.
[56] Exhibit B-3, BCUC IR 1.10.1, 1.10.3.
[57] Exhibit B-1, p. 15.
[58] Exhibit B-3, BCUC IR 1.10.4; Exhibit B-4, BCOAPO 1.4.1, 1.4.2.
[59] Exhibit B-1, p. 36; Exhibit B-3, BCUC IR 1.11.2.
[60] Exhibit B-3, BCUC IR 1.11.3.
[61] Exhibit B-1, pp. 28–29.
[62] Exhibit B-1, p. 27.
[63] Exhibit B-3, BCUC IR 1.10.7.
[64] BC Hydro Final Argument, pp. 11–12.

BCOAPO submits BC Hydro's choice of alternatives for further detailed consideration is reasonable. [65]

CEC recommends that the Commission consider the two options presented by BC Hydro as the appropriate alternatives for review. [66]

Commission determination

The Panel notes that BCOAPO and CEC submit that BC Hydro's choice of alternatives (Cease Operations and Decommission or Rehabilitation) for further detailed consideration is reasonable and that BC Hydro has explored and rejected alternate approaches suggested by Commission staff and Interveners for appropriate reasons .

For the above reasons, **the Commission determines that BC Hydro's choice of alternatives (Cease Operations and Decommission or Rehabilitation) as the appropriate alternatives for further detailed consideration.**

4.0 Determination of the appropriate alternative for the Diversion

The Panel, having accepted that the viable alternatives for the Diversion are Cease Operations and Decommission or Rehabilitation, will consider which of those two alternatives is the most appropriate, taking into consideration economic and environmental factors, and local community and First Nations' support.

4.1 Economic factors

In this section, the Panel will consider costs and rate impacts of the Cease Operation and Decommission and Rehabilitation alternatives.

4.1.1 Capital and maintenance costs

In the Application, BC Hydro provided a feasibility-level estimate for the Cease Operations and Decommission alternative. The total implementation phase costs at that time were estimated to be $14.2 million and were subject to an estimating range of +50/-15 per cent ($21.3 million to $12.1 million). [67] In response to a Commission IR, BC Hydro provided an updated AACE Class 3 estimate of $15.04 million, with an accuracy range of +20/-15 per cent ($18.0 million to $12.8 million) (see Table 1). There are also $2.16 million in definition phase sunk costs. BC Hydro is of the view that the provision of the AACE Class 3 estimate does not materially impact the Application or responses to earlier IRs. [68]

[65] BCOAPO Final Argument, p. 5.
[66] CEC Final Argument, p. 7.
[67] Exhibit B-1, p. 27.
[68] Exhibit B-3-2, BCUC IR 1.9.1.1; Attachment 2, p. 1.

Table 1 – Revised Cease Operations and Decommission Cost Estimate[69]

Description	Expected Amount	Authorized Amount
Total Construction Cost (IMP)	$11.08M	
Contingency (IMP)	$1.66M	$3.88M
Loadings (IMP) (Inflation only, Capital Overhead (CO) and Interest During Construction (IDC) are excluded)	$0.13M	$0.15M
IDN Feasibility Costs loadings (from end of DEF to project In-Service Date (ISD))	n/a (No feasibility costs for this project started in DEF Phase)	
DEF Costs loadings through IMP (from end of DEF to project In-Service Date (ISD))	$0.005M	
Total Cost requested for Implementation Phase without Sunk Costs (loaded + reserves) (+20%/-15%)	**$12.88M** **$15.5M ~ $10.9M**	**$15.11M**
DEF Sunk Costs – projected to end of DEF	$2.16M	
IDN Feasibility Sunk Costs	$0.00M	
Total Project Cost loaded with DEF and IDN Feasibility Sunk Cost (Blended rate: +20%/-15%)	**$15.04M** **$18.0M ~ $12.8M**	**$17.27M**
Previous estimate (loaded): +50%/-15%	$14.21M $21.3~ $12.1M	N/A

In the Application BC Hydro also provides an AACE Class 3 estimate of $37.361 million for the expected cost of the Rehabilitation alternative (see Table 2). This includes $2.47 million in costs incurred prior to cancellation and $1.304 million in early implementation phase costs but does not include $2 million in remissible fish screen costs. In other words, the net project capital cost estimate is $35.361 million.[70] In response to Commission IRs, BC Hydro explains that the Rehabilitation estimate has an uncertainty range of +15%/-10%.[71]

Table 2 – Rehabilitation Cost Estimate[72]

Salmon River Diversion – Rehabilitation Alternative Costs	Expected ($ 000)	Authorized ($ 000)
Construction Costs	26,748	26,748
Removal/Demolition Costs	934	934
	27,682	27,682
Implementation Contingency	3,875	7,197
	31,557	34,879
IDC and Overhead	2,030	2,417
Implementation Cost	33,587	37,296
Prior Phase Costs incurred prior to cancellation	2,470	2,470
Early Implementation Phase costs	1,304	1,304
Total Project Costs	37,361	41,070

BC Hydro submits that annual operations and maintenance costs related to the Diversion will be approximately $80,000 for the Rehabilitation alternative (i.e. unchanged from the existing conditions) and approximately $20,000 under the Cease Operations and Decommission alternative.[73]

[69] Exhibit B-3-2, BCUC IR 1.9.1.1; Attachment 2, p. 1.
[70] Exhibit B-1, pp. 30, 32.
[71] Exhibit B-3, BCUC IR 1.8.1, 1.8.2.
[72] Exhibit B-1, p. 20.

BC Hydro explains that the economic analysis of the Rehabilitation option takes into account the avoided cost of decommissioning the Diversion. The present-value cost of a future decommissioning was found to reduce the levelized cost from $70.2/MWh to $55.1/MWh. Excluding costs incurred prior to the Rehabilitation project cancellation would reduce this by a further $4.3/MWh. This assumes 46 GWh of production and a discount rate of 4.9%.[74]

4.1.2 Potential remissible costs

In response to additional IRs, BC Hydro explains that the Comptroller may allow remission of water rentals where a power development water licensee has incurred either increased costs or reduced benefits (or some combination thereof) due to compliance with a Water Use Plan. In the case of the Diversion, BC Hydro would expect approximately $2 million in remissible costs associated with a new fish screen, which would be credited in the first year for the Rehabilitation alternative. However, the removal of the Diversion, which includes removal of the fish screen, is not part of a Water Use Plan order. Accordingly, BC Hydro states the costs would not qualify for remissible treatment under the applicable regulations. BC Hydro has considered this issue but has not presented it to the Comptroller. [75]

BC Hydro also explains that the Campbell River Water Use Plan does not specify any upstream fish passage requirements at the Diversion, so improvement of the fish passage cannot be a requirement of a Water Use Plan and argues that the decision whether, and to what extent, the upstream fish passage should be improved is a decision to be made by BC Hydro. Accordingly, BC Hydro states the costs of improvement would not qualify for remissible treatment.[76]

4.1.3 Capital rationing and rate impacts

In the Application BC Hydro submits that the Rehabilitation alternative is not the best use of capital given BC Hydro's capital spending is constrained by the 10-Year Rates Plan. BC Hydro argues that it will divert resources from other, more critical projects that will provide greater benefits for the resources applied.[77]

However, in response to a BCOAPO IR regarding which critical capital project resources would be diverted if the Rehabilitation alternative was pursued, BC Hydro would not speculate as to which specific projects might be impacted.[78] For this reason, BCOAPO submits that the Commission should not attach any weight to this point in making its determination.[79]

In response to IRs from Commission staff, BC Hydro provided the revenue requirement and rate impacts of the two alternatives, both with and without rate caps. Without rate caps, the cumulative rate increase at the end of fiscal 2024 under the Cease Operations and Decommission alternative is estimated to be 0.03 per cent, slightly lower than the estimated 0.05 per cent under the Rehabilitation alternative. With rate caps, under the Cease Operations and Decommission alternative the cumulative increase at the end of fiscal 2024 is 0.16% versus 0.14% under the Rehabilitation alternative. [80]

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[73] Exhibit B-3, BCUC IR 1.7.6.
[74] Exhibit B-1, p. 32.
[75] Exhibit B-3, BCUC IR 1.3.3. 1.3.5.
[76] Exhibit B-3, BCUC IR 1.4.3.
[77] Exhibit B-1, p. 34.
[78] Exhibit B-4, BCOAPO IR 1.13.1.
[79] BCOAPO Final Argument, p. 8.
[80] Exhibit B-3, BCUC IR 1.7.6.

In its final argument BC Hydro submits that the rate impact analysis of alternatives indicates an approximate 0.03 to 0.05 per cent impact and does not particularly aid in distinguishing alternatives considered in this Application.[81]

4.2 Environmental factors

BC Hydro states there are two primary reasons why it expects the Cease Operations and Decommission alternative to result in improved fish productivity:

- A reduction in pre-spawn mortality is expected due to increased passage efficiency through reduced passage delays and faster passage speeds; and
- An increase in juvenile survival rates is expected due to the quality of the habitat above the diversion being much higher than that downstream; DFO has indicated this headwater habitat with lower mid-summer water temperatures will be important to the Salmon River stocks.

> Run sizes are expected to increase due to the expansion of available habitat following the removal of the Salmon River Diversion. Rearing habitat will increase up to 25 per cent over the current habitat downstream of the diversion. Because of the high quality of the habitat, much higher juvenile to adult survivals is expected, compared to current production downstre am of the diversion. Spawning habitat will be increased by as much as 33 per cent by opening up access to the upper Salmon River; a commensurate increase in run size is expected over time.[82]

BC Hydro also asserts that neither the existing downstream fish screen nor the upstream fishway "operate as designed, and both need significant upgrades to meet current expectations for such facilities."[83] However, the Campbell River Water Use Plan which contains legal obligations with respect to fish and fish habitat doe s not specify any upstream fish passage requirements at the Salmon River Diversion.[84]

BC Hydro states:

> [As] part of the Impact Benefits Agreements with We Wai Kai and Wei Wai Kum for the John Hart Upgrade Project (signed in 2012), BC Hydro committed to (a) co-manage the decision making process with BC Hydro to identify an upstream fish passage solution for Salmon River, and subject to reasonable funding by BC Hydro, (b) to work together to implement the fish passage solution at the Salmon River Diversion.[85]

BC Hydro indicates that it:

> …is difficult to provide a quantitative evaluation of the current facility (adult and juvenile passage), but conservatively it was less than 60 per cent effective at providing upstream fish passage. BC Hydro believes that a well-designed passage facility (in tandem with an effective smolt bypass system) would operate above 90 per cent effectiveness. At this level of effectiveness BC Hydro considers that the facility is no longer limiting productivity.[86]

[81] BC Hydro Final Argument, p. 14.
[82] Exhibit B-3, BCUC IR 15.3.
[83] Exhibit B-3, BCUC IR 7.1.
[84] Exhibit B-3, BCUC IR 4.3.
[85] Exhibit B-3, BCUC IR 4.4.
[86] Exhibit B-3, BCUC IR 15.8.

In its final argument, BC Hydro submits:

> Environmental studies highlight the benefits of upstream passage with improved habitat leading to expected increase in spawning and higher expected survival rates of adult and juvenile fish stocks. Ceasing operation and removal of the Dam will allow natural movement of sediments and gravel recruitment in the areas above and below the Diversion, and continuing downstream. Other environmental benefits include the removal of creosote contamination, retention of smolts in the Salmon River, elimination of inter-basin water diversion. Rehabilitation may improve fish passage and survival rates, through better designed and integrated fishway and fish screen, but it does not reach the levels expected from the Decommissioning Alternative.[87]

4.3 Local community and First Nations support

In its Application, BC Hydro provides letters of support for the Cease Operation and Decommission alternative from federal and provincial agencies with jurisdiction over fisheries and environmental issues, a diverse group of community stakeholders, local governments, and First Nations.[88] BC Hydro submits the local communities are very strongly in favour of removing the Dam as soon as possible. BC Hydro explains there was significant community disappointment when BC Hydro was unable to proceed with improvements, both in 2015 and then again in 2016, but there is a high level of support and approval to remove the Dam for unhindered fish passage.[89] BC Hydro explains that K'omoks, We Wai Kai, and Wei Wai Kum First Nations have informed BC Hydro that they support the decommissioning of the Dam and concur that decommissioning is the best alternative for fish passage.[90]

In response to Commission IRs, BC Hydro confirms that each of the entities providing support for the Cease Operations and Decommission alternative would also support or did support the Rehabilitation alternative.[91]

In its final argument, BC Hydro submitted it is of the view that the broad support for the Project enhances BC Hydro reputation and social licence to operate facilities throughout the Campbell River System.[92]

Intervener arguments on economic and environmental factors, and local community and First Nations' support

BCOPAO agrees that where cost and rate impact differences between alternatives are minor, environmental and social impacts should play a greater role. BCOAPO notes that while the Rehabilitation alternative offers some environmental improvements over the current situation it does not totally eliminate obstacles to upstream fish passage and downstream fish migration. BCOAPO submits that both of these issues are better addressed by the Cease Operations and Decommission alternative. In addition, BCOAPO submits that while the residual risks related to dam safety are minor under the Rehabilitation alternative, the Cease Operations and Decommission alternative completely eliminates such issues by removing the Dam. BCOAPO also notes that the Cease Operations and Decommission alternative is supported by government agencies, community stakeholders and First Nations. Overall, BCOAPO submits that the Cease Operations and Decommission alternative is preferable from an environmental and social perspective.[93]

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[87] BC Hydro Final Argument, p. 16.
[88] Exhibit B-1, Appendices H, I, J.
[89] Exhibit B-1, p. 39.
[90] Exhibit B-1, p. 41.
[91] Exhibit B-3, BCUC IR 1.21.1.
[92] BC Hydro Final Argument, p. 16.
[93] BCOAPO Final Argument, p. 9.

CEC submits that given the marginal difference in the economics of the two options, it agrees with BC Hydro that the Commission should give considerable weight to the non-economic factors of the two options. CEC agrees that the Cease Operation and Decommission alternative provides more of these benefits than the Rehabilitation alternative. CEC recommends the Commission approve the Application as filed.[94]

Bishop submits "the expected benefits of permanently ceasing operations and abandoning [the Diversion] are insufficient to relinquish $3.9 million dollars in annual revenue and that the Application does not serve the greater public interest" and opposes the Application.[95]

Landale submits that BC Hydro appears to have undertaken serious impact studies, remediation and investigated various alternatives to ceasing operations, all of which seem quite comprehensive, and informing in and of themselves to the Commission. As such, Landale supports the Application.[96]

BC Hydro reply on economic and environmental factors, and local community and First Nations' support

In response to CEC, BC Hydro explains that it has taken a similar position to CEC "…in suggesting that non-economic factors should, in this instance, be given more weight than they otherwise would in light of the similar economics of the alternatives to the Project."

BC Hydro notes that, the opportunity costs of forgone improvements to relations with the stakeholder and First Nations associated with perpetuating the Salmon River Diversion in the Campbell River System are real and will be felt in the near term.[97]

In response to Bishop, BC Hydro argues that "Mr. Bishop's submissions fail to grapple with the central thrust of BC Hydro's argument, namely that where the economics of the reasonable alternatives are close, that non-economic factors can and should justify the Project."[98] BC Hydro also notes that fulsome discussions of fish passage and fish screen improvements have occurred over a numbers of years and included government agencies, community stakeholders and First Nations. BC Hydro argues that:

> Mr. Bishop appears to suggest that BC Hydro did not provide evidence to support the environmental impacts of the Salmon River Diversion. BC Hydro notes that the Application and a number of responses to Information Requests identify environmental considerations and impacts. In support, BC Hydro also provided a report entitled Salmon River Upstream Fish Passage, Step 3 - Environmental Feasibility Assessment as Attachment 1 to its response to BCUC IR 1.15.1.[99]

Panel discussion

Economic factors

The Panel has reviewed the cost estimates BC Hydro provided for the Cease Operations and Decommission and Rehabilitation alternatives and considers these estimates to have been developed to the appropriate level of detail for a comparison of the viable alternatives.

The Panel recognizes that BC Hydro would expect to incur $15 million in costs under the Cease Operations and Decommission alternative and that this would include removing the fish screen and would likely result in a

[94] CEC Final Argument, p. 17.
[95] Bishop Final Argument, p. 3.
[96] Landale Final Argument, p. 4.
[97] BC Hydro Reply, pp. 4–5.
[98] BC Hydro Reply, p. 8.
[99] BC Hydro Reply, p. 10.

comparable, if not greater benefit, to fish than would installing a new fish screen under the Rehabilitation alternative.

The Rehabilitation alternative qualifies for $2 million in remissible costs. However, BC Hydro submits the Cease Operations and Decommission alternative would not. The Panel is concerned that BC Hydro has not presented a case to the Comptroller to attempt to obtain the $2 million in remissible costs for the Cease Operations and Decommission alternative. The Panel is of the view that it would have been, and still is, appropriate for BC Hydro to present this information to the Comptroller and request $2 million in remissible costs.

The Panel notes that either alternative has very little rate impact over the remaining term of BC Hydro's 10-Year Rates Plan.

In addition, the Panel agrees with BCOAPO that no weight should be attached to BC Hydro's argument that its capital spending is constrained and that rehabilitation would divert resources from other, more critical projects. BC Hydro did not offer evidence of which projects might be impacted if it went ahead with the Rehabilitation alternative. However, the Panel recognizes that there would not actually be any capital savings by not selecting the Rehabilitation alternative as BC Hydro would spend on other projects.

It is the Panel's view that the economics of the two alternatives are similar in their ratepayer impacts.

Environmental factors

The evidence indicates that a well-designed fishway would be expected to operate at above 90 percent effectiveness and that at this passage level enough spawning salmonids would be expected to migrate upstream so as to not limit the productivity of the habitat above the Diversion. The redesign and installation of the fish screen and ladder components of the Rehabilitation alternative have some inherent risk as demonstrate d by the limited effectiveness of the current fish screen and ladder.

The Panel is of the view that the Cease Operations and Decommission alternative offers similar benefits to fish productivity as the Rehabilitation alternative but at lower risk.

Local community and First Nations support

The Panel gives significant weight to the numerous letters of support BC Hydro provided in support of the Cease Operations and Decommission alternative. These letters are from federal and provincial agencies with jurisdiction over fisheries and environmental issues, community stakeholders, local governments, and First Nations.

Commission determination

Having considered the economic and environmental factors, and local community and First Nations support as outlined above, the Commission, pursuant to section 41 of the *Utilities Commission Act,* grants permission for BC Hydro to permanently cease operations and decommission the Salmon River Diversion as set out in its Application.

In addition, the Commission directs BC Hydro to present the relevant information to the Comptroller and apply for $2 million in remissible costs and report back on the outcome. If the Cease Operations and Decommission of the Diversion qualifies and BC Hydro receives $2 million, the actual costs are to be reduced by an equal amount.

5.0 Accounting treatment

5.1 Costs forecasted in BC Hydro's Fiscal 2017 to Fiscal 2019 Revenue Requirements Application

BC Hydro's forecast cost of $15 million to Cease Operations and Decommission the Salmon River Diversion in its Application were not included in the forecast costs set out in BC Hydro's Fiscal 2017 to Fiscal 2019 Revenue Requirements Application (F2017–19 RRA or RRA), as it was assumed, at the time the RRA was filed, that the operations of the Diversion would continue during the three-year test period. As a result, there will be an approximate variance of $15 million to the dismantling costs forecasted in the revenue requirements due to the Cease Operations and Decommission of the Diversion.[100,101] BC Hydro believes the variance, which will be equal to the actual dismantling costs, will be eligible to be recorded in the Dismantling Cost Regulatory Account (DCRA), which is a regulatory account BC Hydro is requesting approval for in the RRA.[102]

BC Hydro identified other variances to the cost forecast in the RRA that will likely arise as a result of the Cease Operations and Decommission of the Diversion, some of which would be eligible for deferral to existing regulatory/deferral accounts and some which would not.[103] Specifically:

Variances not eligible for deferral

- Depreciation Expense which will be reduced with the removal of the majority of the Diversion's assets from rate base (favourable to BC Hydro);
- Operating and maintenance expenditures (O&M) which will be reduced by the net difference between the O&M costs for the Diversion included in the RRA and the lower O&M costs after the Diversion ceases operations and is decommissioned (favorable to BC Hydro); and
- An unplanned loss upon the retirement of the net book value (NBV) of the Diversion's assets (Unplanned Loss) due to the majority of the Diversion's assets being removed from rate base before being fully depreciated (unfavorable to BC Hydro to the extent that the actual gains and losses exceed the RRA provision forecast[104]).

Variances eligible for deferral to the Heritage Deferral Account[105]

- Water rental fees; and
- Water license fee.[106]

[100] Exhibit B-1, p. 37; Exhibit B-3, BCUC IR 1.17.1.
[101] There were no planned capital expenditure or additions related to the Diversion in the RRA.
[102] Exhibit B-3, BCUC IR 1.18.1.
[103] Exhibit B-3, BCUC IR 1.18.3.
[104] There is a general forecast (provision) included in the RRA for expected gains and losses on dispositions of assets; however, there is no protection for variances between the expected and the actual amount (Exhibit B-3, BCUC IR 1.16.5). BC Hydro explains that it will only be at risk for the Unplanned Loss to the extent it results in an overall variance between plan and actual capital asset gains and losses included in the provision in the RRA (Exhibit B-3, BCUC IR 1.17.2).
[105] There could also be surplus sales variance and if so it would be added to the HDA (Exhibit B-3, BCUC IR 1.17.2).
[106] Exhibit B-3, BCUC IR 1.17.1 and 1.17.2.

Table 3 F2019 Revenue Requirements Application Variances (Excluding Direct Costs to Cease Operations and Decommission the Diversion)[107,108]

Other Expected Variances in the 2017-2019 RRA	F2019	Eligible for Deferral
Negative varainces are favorable to BC Hydro		
Diversion Dismanteling Costs		
Reduction in depreciation expense	-$ 49,700	No
Lower O&M Costs	-$ 48,900	No
Sub Total	**-$ 98,600**	
Unplanned loss on the NBV at October 31, 2107	**$ 658,000**	No
Lower water rental costs	-$ 300,000	Yes - HDA
Lower water license fees	-$ 5,500	Yes - HDA
Sub Total	**-$ 305,500**	

BC Hydro explains that it is not requesting any additional deferral treatment for the expected favorable variance due to the reduction in Depreciation Expense and O&M, as these will be offset by the unfavorable Unplanned Loss. [109]

5.1.1 Regulatory Account Treatment

BC Hydro is requesting approval of the DCRA as part of the RRA which the Commission will be making a determination on later in 2017. In the event the account is approved, BC Hydro states that to the extent total dismantling costs incurred for the year exceed the planned (forecast) dismantling cost for the year, as included in the RRA, the variance would be transferred to the DCRA. Total dismantling costs would include actual dismantling costs to Cease Operations and Decommission the Diversion. [110]

If approval for the DCRA is denied in the RRA, BC Hydro requests in its Application to transfer the actual costs to Cease Operations and Decommission the Diversion to the Heritage Deferral Account (HDA), to be recovered by way of the Deferral Account Rate Rider.[111] BC Hydro stated in an IR response that it would prefer to transfer costs to the HDA, but would not be opposed to recording the costs to the Non Heritage Deferral Account (NHDA) or a separate regulatory account.[112]

Intervener arguments

CEC and BCOAPO in their final arguments generally support regulatory account treatment of the costs to Cease Operations and Decommission the Diversion, while Bishop does not address the financial treatment of the costs and Landale's final argument opposes any regulatory account treatment. Landale objects to the deferral

[107] Exhibit B-3, BCUC IR 1.17.1 and 1.17.2. (Please note "October 21, 2107" should read: October 21, 2017)
[108] It should be noted that BC Hydro has not included the variance related to the five months in F2018 (November 31, 2017 when the asset is expected to be decommissioned to March 31, 2019).This would increase the expected depreciation and the O&M variance by approximately $44,092 (5/12 * $98,600) and the COE variance to be added to the HDA by approximately $127,292 (5/12 *$305,500).)
[109] Exhibit B-3, BCUC IR 1.17.2 and 1.17.2.1.
[110] Exhibit B-3, BCUC IR 1.17.2.
[111] Exhibit B-1, p. 37, Exhibit B-3, BCUC IR 1.19.6.
[112] Exhibit B-3, BCUC 1.19.6.

treatment put forward in the Application.[113] He takes the position that all the costs associated with the Application should be assigned to a 'regular account' for inclusion in 'rate base' and further submits that "we must stop adding every little nut and bolt to deferral accounts".[114]

CEC recommends applying the costs to Cease Operations and Decommission the Diversion to the DCRA, should that account be approved in the RRA proceeding. CEC submits that in the event the DCRA is not approved, it recommends applying the cost to the NHDA, as BC Hydro has submitted that the Diversion is not itself a heritage asset and therefore the HDA may not be the appropriate deferral account. [115]

BCOAPO agrees that if the DCRA is approved, the costs to Cease Operation and Decommission the Diversion would, in principle, be eligible for transfer to that account. However, BCOAPO submits that in the RRA, BC Hydro proposes the account capture variances between the planned and actual dismantling costs. In the case of the Diversion Project there are no "planned" costs included in the RRA. For this reason, BCOAPO questions whether the costs to Cease Operations and Decommission the Diversion would in fact be eligible to be recorded in the DCRA, if approved. [116]

BCOAPO also questions whether the variance related to Depreciation Expenses and O&M ($98,600) should also be recorded in the regulatory account as an offset to the actual costs to Cease Operations and Decommission the Diversion. BCOAPO submits that, under normal circumstances, such costs should be considered as an offset to the actual costs (similar to how planned dismantling costs included in the RRA would be an offset) for purposes of determining the amounts to be transferred to the regulatory account. [117]

BCOAPO further submits that if the Commission determines, based on BC Hydro's rationale, that such costs should not be used as an offset then the Commission should make it clear in its determination that this is an exception and should not be considered as a precedent for the treatment of the costs associated with future cease operations and decommissioning projects.[118]

Finally, BCOAPO submits that in the event the DCRA is not approved, the appropriate regulatory account would be the NHDA and not the HDA for the same reasons given by CEC.[119]

BC Hydro Reply

In reply to BCOAPO, BC Hydro disagrees that, to the extent there is a variance in Depreciation Expense and O&M, it should be an offset to the actual Dismantling Costs recorded in the regulatory account. BC Hydro clarifies that regulatory account treatment of dismantling costs to date[120] has not included variances related to Depreciation Expense or O&M, rather only the actual dismantling costs incurred were charged to the regulatory account and the same principal is envisioned for the proposed DCRA. Specifically, in the RRA, BC Hydro is not requesting that any related O&M variances or variances related to depreciation on existing assets, whether higher or lower than plan, be captured in the DCRA .[121]

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[113] Landale Final Argument, p. 1.
[114] Landale Final Argument, p. 4.
[115] CEC Final Argument, pp. 17–18.
[116] BCOAPO Final Argument, p. 10.
[117] BCOAPO Final Argument, pp. 10–11.
[118] BCOAPO Final Argument, pp. 10–11.
[119] BCOAPO Final Argument, p. 12.
[120] Under the Future Removal and Site Restoration Regulatory Account (BC Hydro requested to have the name changed to the Dismantling Cost Regulatory Account).
[121] BCH Reply Argument, pp. 5–7.

In reply to Landale, BC Hydro provides additional information on the forecast interest costs of the proposed deferral treatment, but it does not directly address Landale's objection to the deferral treatment requested in the Application.

Commission determination

As part of the BC Hydro F2017–19 RRA currently before the Commission, BC Hydro is requesting that variances between planned and actual dismantling costs be added to the Dismantling Cost Regulatory Account (DCRA) for future recovery in rates. In its reply submission in this proceeding, BC Hydro clarified that the request put forward in the RRA only includes variances in actual decommissioning costs and not any other related variances such as O&M or Depreciation Expenses, as suggested by BCOAPO.

The Panel agrees with BC Hydro that in the event the DCRA account is approved in the RRA, as requested, the costs to Cease Operations and Decommission the Diversion will be eligible to be included as part of the actual dismantling costs for the purpose of calculating the positive or negative variance to be recorded in the DCRA. However, the other related variances, such as O&M or Depreciation Expenses, will not.

The Panel is mindful that the RRA Panel will shortly be determining whether or not dismantling cost variances should be afforded deferral account treatment including which specific costs may be eligible. The review of this issue will be made in the broader context of BC Hydro operations as a whole. At this time, this Panel sees no reason to allow, or require, a variance to be recorded in the DCRA relating specifically to the costs to Cease Operation and Decommission the Diversion that may not be consistent with any determinations to be made in the RRA.

Therefore, in the event the DCRA is approved in the BC Hydro F2017–19 RRA proceeding, the Panel finds that BC Hydro may transfer the costs incurred to Cease Operations and Decommission the Diversion into the DCRA, consistent with the terms approved for that account in the F2017–19 RRA.

In the event that the DCRA is not approved as filed, the Panel does not agree, at this time, that BC Hydro should be allowed to recover the costs to Cease Operations and Decommission the Diversion in future rates by allowing them to be included in an alternate regulatory account, be it the HDA or the NHDA.

At this time, the Panel does not consider there to be anything special or unique about the costs to Cease Operation and Decommission the Diversion that would warrant alternate treatment from the general dismantling costs treatment that will be determined in the RRA. The Panel considers that treatment of the costs to Cease Operations and Decommission the Diversion should be consistent with the general treatment of BC Hydro's other dismantling costs.

If BC Hydro's request for the DCRA is not approved in the F2017–19 RRA proceeding, the Panel, for the reasons stated above, denies permission to transfer the costs to Cease Operations and Decommission the Diversion to the Heritage Deferral Account or the Non Heritage Deferral Account.

If upon completion of the Project, the costs to Cease Operations and Decommission the Diversion are not covered by the general forecast (provision) included in the RRA and if BC Hydro believes that the RRA decision did not adequately cover circumstances similar to those of the Diversion, BC Hydro may apply to the Commission to review the recovery of those costs in light of the Commission's determinations on the matter of general regulatory treatment of dismantling costs.

6.0 Reporting

Commission determination

The Panel has reviewed BC Hydro's reporting proposal in the Application and responses to IRs, and finds it to be appropriate. BC Hydro is directed to file a report with the Commission within six months of substantial completion of the Cease Operations and Decommission work, summarizing the costs of the work and its accounting treatment, and providing explanation and justification of any material variances from the project plan, scope, schedule, budget or quality. BC Hydro is to also file a final completion report including similar information as the Heber Diversion Cease of Operations project Final Completion Report after obtaining the Certificate of Compliance issued by the Ministry of Environment, which may take 18 months to two years from substantial completion.

7.0 Summary of directives

This summary is provided for the convenience of readers. In the event of any difference between the Directions in this Summary and those in the body of the decision, the wording in the decision shall prevail.

	Directive	**Page**
1.	Based on the evidence provided, the Panel finds that section 14 of the CEA limits heritage assets to the generation and storage assets identified in Schedule 1 of the CEA and cannot be interpreted so broadly as to include the Salmon River Diversion as a heritage asset merely by association with other BC Hydro generation and storage heritage assets on the Campbell River Hydroelectric System. Further, the Panel finds that by not expressly identifying the Salmon River Diversion in Schedule 1 of the CEA, the legislature did not intend to include it as a generation and storage heritage asset. Therefore, the Panel finds that section 14 of the CEA does not restrict BC Hydro from disposing of the Salmon River Diversion assets.	3
2.	The Panel has reviewed the evidence and arguments and finds that there is a need and justification to address the condition of the Dam, Flume and Canal.	8
3.	The Panel also finds that there is a need to address fish screen and fishway performance as BC Hydro has made commitments to improve fish passage as part of the Water Use Planning process and under an impact benefits agreement with First Nations.	8
4.	The Commission determines that BC Hydro's choice of alternatives (Cease Operations and Decommission or Rehabilitation) as the appropriate alternatives for further detailed consideration.	10
5.	Having considered the economic and environmental factors, and local community and First Nations support as outlined above, the Commission, pursuant to section 41 of the *Utilities Commission Act,* grants permission for BC Hydro to permanently cease operations and decommission the Salmon River Diversion as set out in its Application.	16
6.	In addition, the Commission directs BC Hydro to present the relevant information to the Comptroller and apply for $2 million in remissible costs and report back on the outcome. If the Cease Operations and Decommission of the Diversion qualifies and BC Hydro receives $2 million, the actual costs are to be reduced by an equal amount.	16

7.	Therefore, in the event the DCRA is approved in the BC Hydro F2017–19 RRA proceeding, the Panel finds that BC Hydro may transfer the costs incurred to Cease Operations and Decommission the Diversion into the DCRA, consistent with the terms approved for that account in the F2017–19 RRA.	20
8.	If BC Hydro's request for the DCRA is not approved in the F2017–19 RRA proceeding, the Panel, for the reasons stated above, denies permission to transfer the costs to Cease Operations and Decommission the Diversion to the Heritage Deferral Account or the Non Heritage Deferral Account.	20
9.	The Panel has reviewed BC Hydro's reporting proposal in the Application and responses to IRs, and finds it to be appropriate. BC Hydro is directed to file a report with the Commission within six months of substantial completion of the Cease Operations and Decommission work, summarizing the costs of the work and its accounting treatment, and providing explanation and justification of any material variances from the project plan, scope, schedule, budget or quality. BC Hydro is to also file a final completion report including similar information as the Heber Diversion Cease of Operations project Final Completion Report after obtaining the Certificate of Compliance issued by the Ministry of Environment, which may take 18 months to two years from substantial completion.	21

DATED at the City of Vancouver, in the Province of British Columbia, this 16th day of June, 2017.

Original signed by:

W. M. EVERETT, QC
PANEL CHAIR / COMMISSIONER

Original signed by:

B. A. MAGNAN
COMMISSIONER

Original signed by:

R.D. REVEL
COMMISSIONER

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ORDER NUMBER
G-96-17

IN THE MATTER OF
the *Utilities Commission Act*, RSBC 1996, Chapter 473

and

British Columbia Hydro and Power Authority
Salmon River Diversion Ceasing of Operations Application

BEFORE:
W. M. Everett, QC, Chair/Commissioner
B. A. Magnan, Commissioner
R.D. Revel, Commissioner

on June 16, 2017

ORDER

WHEREAS:

A. On March 7, 2017, British Columbia Hydro and Power Authority (BC Hydro) filed an application (Application) with the British Columbia Utilities Commission (Commission) under section 41 of the *Utilities Commission Act* (UCA), for permission to permanently cease operation of and decommission the Salmon River Diversion facility located on Vancouver Island (Salmon River Diversion or Diversion). The proposed scope of the project includes removal of the timber-crib diversion dam, all mechanical equipment at the headworks, mechanical equipment at the downstream fish screen, the Patterson Creek flume portion of the canal and restoration and remediation work all as set out in the Application;

B. The Salmon River Diversion was built in 1957–1958 and is located in central Vancouver Island about 30 km west of Campbell River. The Diversion redirects a portion of the water flow from the Salmon River through an approximately 3 km long concrete-lined canal to an unnamed pond and then through an improved natural channel to Brewster Lake, from which it enters the Lower Campbell Reservoir where it is used to augment generation at the Ladore and John Hart generating stations;

C. BC Hydro also requests permission to transfer the costs incurred to cease operations and decommission the Diversion into the Dismantling Cost Regulatory Account (DCRA), which BC Hydro has requested approval for in its Fiscal 2017 to Fiscal 2019 Revenue Requirements Application (RRA). If BC Hydro's request for the DCRA is not approved, then BC Hydro requests permission to transfer these costs to the Heritage Deferral Account (HDA);

D. Roy Bishop, Richard Landale, Commercial Energy Consumers Association of British Columbia, and British Columbia Old Age Pensioners' Organization, Active Support Against Poverty, Disability Alliance BC, Council of Senior Citizens' Organizations of BC, Together Against Poverty Society, and the Tenant Resource and Advisory Centre (collectively, BCOAPO) registered as interveners in this proceeding;

E. The written proceeding included one round of information requests, responses and arguments;

F. On May 9, 2017, BC Hydro submitted a revised cost estimate to cease operations and decommission the Diversion. The revised cost estimate is $15.0 million, with an accuracy range of +20/-15 per cent;

G. The Panel reviewed the Application and submissions and determines that the following orders are warranted.

NOW THEREFORE, for the reasons contained in the decision issued concurrently with this order, the British Columbia Utilities Commission (Commission) orders as follows:

1. Pursuant to section 41 of the *Utilities Commission Act*, the Commission grants permission for the British Columbia Hydro and Power Authority (BC Hydro) to permanently cease operations and decommission the Salmon River Diversion facility (Diversion) as set out in its Application.

2. In the event the Dismantling Cost Regulatory Account (DCRA) is approved in the BC Hydro Fiscal 2017 to Fiscal 2019 Revenue Requirements Application (RRA) proceeding, BC Hydro may transfer the costs incurred to cease operations and decommission the Diversion into the DCRA, consistent with the terms approved for that account in the RRA. If BC Hydro's request for the DCRA is not approved in the RRA proceeding, the Panel denies permission to transfer the costs to cease operations and decommission the Diversion to the Heritage Deferral Account or the Non Heritage Deferral Account.

3. BC Hydro is directed to file a report with the Commission within six months of substantial completion of the cease operations and decommission work, summarizing the costs of the work and its accounting treatment, and providing explanation and justification of any material variances from the project plan, scope, schedule, budget or quality. BC Hydro is to also file a final completion report including similar information to the Heber Diversion Cease of Operations project Final Completion Report after obtaining the Certificate of Compliance issued by the Ministry of Environment, which may take 18 months to two years from substantial completion.

4. BC Hydro is to comply with all directives and determinations set out in the decision accompanying this order.

DATED at the City of Vancouver, in the Province of British Columbia, this 16th day of June, 2017

BY ORDER

Original signed by:

W. M. Everett, QC
Commissioner

IN THE MATTER OF
the *Utilities Commission Act*, RSBC 1996, Chapter 473

and

British Columbia Hydro and Power Authority
Salmon River Diversion Ceasing of Operations Application

EXHIBIT LIST

Exhibit No.	**Description**
COMMISSION DOCUMENTS	
A-1	Letter dated March 23, 2017 - Appointing the Panel for the review of BC Hydro's Salmon River Diversion Ceasing of Operations Application
A-2	Letter dated March 28, 2017 – Establishing Regulatory Timetable and Public Notice
A-3	Letter dated April 10, 2017 – BCUC Information Request No. 1 to BC Hydro
APPLICANT DOCUMENTS	
B-1	**BC HYDRO (BCH)** Letter dated March 7, 2017 – Salmon River Diversion Ceasing of Operations Application
B-2	Letter dated April 18, 2017 – BCH Submitting Notice of Application Published in News Publications
B-3	Letter dated May 3, 2017 – BCH Submitting Responses to BCUC Information Request No. 1
B-3-1	**CONFIDENTIAL** Letter dated May 3, 2017 – BCH Submitting Confidential Responses to BCUC Information Request No. 1
B-3-1-1	**CONFIDENTIAL** Letter dated May 9, 2017 – BCH Submitting Confidential Supplemental Response to BCUC IR 1.9.1.1 Attachment 2
B-3-2	Letter dated May 9, 2017 – BCH Submitting Revised Response to BCUC IR 1.7.2, Attachment 1 Supplemental Response to BCUC IR 1.9.1.1, Attachment 2
B-4	Letter dated May 3, 2017 – BCH Submitting Responses to Interveners Information Request No. 1

Exhibit No.	Description

INTERVENER DOCUMENTS

C1-1	**LANDALE, RICHARD (LANDALE)** Letter dated March 30, 2017 - Request to Intervene by Richard Landale
C1-2	Letter dated April 19, 2017 – Landale Submitting IR No.1 to BC Hydro
C2-1	**BISHOP, ROY (BISHOP)** Letter dated April 7, 2017 - Request to Intervene by Roy Bishop
C2-2	Letter dated April 19, 2017 – Bishop Submitting IR No.1 to BC Hydro
C3-1	**BRITISH COLUMBIA OLD AGE PENSIONERS' ORGANIZATION, ACTIVE SUPPORT AGAINST POVERTY, COUNCIL OF SENIOR CITIZENS' ORGANIZATIONS OF BC, DISABILITY ALLIANCE BC, AND THE TENANT RESOURCE AND ADVISORY CENTRE, (BCOAPO ET AL.)** Letter dated April 7, 2017 - Request to Intervene by Tannis Braithwaite
C3-2	Letter dated April 19, 2017 – BCOAPO Submitting IR No.1 to BC Hydro
C4-1	**COMMERCIAL ENERGY CONSUMERS ASSOCIATION OF BRITISH COLUMBIA (CEC)** Letter dated April 7, 2017 - Request to Intervene by David Craig
C4-2	Letter dated April 19, 2017 – CEC Submitting IR No.1 to BC Hydro

LETTERS OF COMMENT

E-1	Trevena, Claire Letter of Comment dated April 6, 2017