

Commission Secretary BCUC:EX

From: new <tialynn2@shaw.ca>
Sent: Friday, May 19, 2017 1:16 PM
To: Commission Secretary BCUC:EX
Cc: Roy Bishop
Subject: Re: Final Argument of Roy Bishop, Intervener C2-1, on BCUC Hearing 1598907...

Final Argument of Roy Bishop, Intervener C2-1, on BCUC Hearing 1598907- Application By BC Hydro to Permanently Cease Operations of the Salmon River Diversion (SRD)

I respectfully offer the following comments based on my review of the Application and IR responses:

The Application before the Commission can be summarized as- Has BC Hydro made a decision in respect of the SRD that is cost-effective and best serves the public interest?

As I see it, the Panel must make a judgement as to whether BC Hydro performed due diligence in recommending to permanently cease operations of the SRD and are the costs of the preferred option prudent to be covered from Ratepayers?

1. BC Hydro states that it made commitments to the We Wai Kai and Wei Wai Kum, as well as other stakeholders, to improve Coho and Steelhead fish passage in the upper Salmon River during the Campbell River Water Use Plan and the John Hart Renewal CPCN? BC Hydro also submitted "**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**" (BCH response to BCUC IR 1.4.4). Will the Panel please note that this is not a "must do" commitment but one of "**subject to reasonable funding by BC Hydro**" which is ultimately born by ratepayers.

BC Hydro states that there is support for the Project from First Nations, the Comptroller, DFO, elected officials, city governments, fish societies and others. I ask that the Panel reflect on BC Hydro's submission that "**it was estimated that the direct recreational expenditure per resident BC angler in that year (2005) was \$696 for freshwater fishing and \$1,102 for saltwater fishing**" and "**MOE estimates that anglers spend on average about \$100 per rod-day (M. McCulloch, MOE, pers. comm.). This suggests that the 600 rod-days for the Salmon River would contribute \$60,000 per year toward local economies. If it is assumed that providing fish passage increases the abundance of adult steelhead by 30%, and that this leads to 30% more rod-days, then contribution to local economies would increase by \$18,000 per year.**" (BC Hydro response to BCUC IR 1.15.1 Attachment 1, p.32 of 37).

I submit that \$3.9 million in annual lost BC Hydro revenue (BCUC IR 1.13.1 Attachment 1, BCH response to CEBC IR 1.16.4) in favour of returning a targeted additional 200 steelhead and 650 Coho in the upper Salmon River (BCH response to BCUC IR 1.15.3, p.2) , which translates to \$3.9M/850 fish = \$4,600 per fish, and contributing \$18,000 per year to local economies (albeit the increase would be greater considering the saltwater fishery impacts) are not reasonable costs and does not best serve the greater public interest?

To put this in perspective, consider that if an average home heating bill is \$3900 per year (hypothetically speaking and probably on the high side), then this represents 1000 homes that could have been heated for free. Is the Panel prepared to explain to seniors on fixed incomes, single mothers on welfare, those asking for reconsideration of the E-Plus decision or anyone else living on the margin- that the sport fishery is more important than keeping rates affordable? Please note the dollar figures used above are just an illustration of the tradeoffs of special interest groups pursuing their agenda at ratepayers expense. This is not to say that environmental stewardship and the tourism fishery's contribution to local economies are not important only that the costs are unreasonable at \$4,600 per fish (\$3.9M/850 fish) and a somewhat minimal local economic contribution of \$18,000 when compared to \$3,900,000- a factor of 3.9M/18K= 217.

BC Hydro will rebut that upstream fish passage and the contributions to the local economy are not the only considerations of the Project. Other issues (plant condition, smolt survival rates past the fish screen, alternatives, etc.) must also be considered and some are discussed later in this submission.

2. I note in the Application that SRD plant was allowed to deteriorate (due to, in a large part, a lack of timely maintenance) to the point where Capital funds are required to correct deficiencies- such that now refurbishment is marginally economic. This begs the question that either BC Hydro has been underfunded to perform sufficient maintenance on SRD plant, or that BC Hydro directed its Vancouver Island generation operating funds included in rate base to other projects. BC Hydro states in its Response to BCUC IR 1.16.8.1 **“Confirmed, all assets included in rate base, including those related to the Salmon River Diversion must be “used and useful”**. Since there was only 1 round of IR’s, I recommend the Commission determine if the SRD assets were included in rate base during the years (at least 2011 to 2013) the diversion was out of service (while BC Hydro deliberated on the future state of the assets) and/or for the years no maintenance was performed. BC Hydro’s response that it did not want to pursue a piecemeal approach until it made a more fulsome determination on the overall condition of the complete facility is worth merit, however I note repairs were indeed performed on a limited basis and the SRD was returned to service in 2013, albeit at a reduced capacity. I did not uncover any evidence to convince me that this “piecemeal” approach could not continue for another 20 years where the cost of the repairs have a NPV >1. The Associated Engineering (AE) report substantiates this opinion (see last paragraph in point 5 below). It is recognized that there is some risk to this approach, however BC Hydro appears to be risk adverse at this facility even though the safety consequences are low.

As a general comment for Commission oversight- the Commission should discourage the practise of deferring plant maintenance until repairs can be funded by Capital as this adds significantly to costs born by ratepayers.

3. As for the high cost of the Project compared to Associated Engineering’s report- In my experience, the Commission should anticipate costs of the Project in the order of 2.5 to 3 times the costs of performing the actual “brick and mortar” work as estimated by Associated Engineering (AE). This multiplication factor is due to how government entities (such as DFO, MoE, the Comptroller, etc), the courts, stakeholders, special interest groups and the Commission have either ordered, demanded or expect BC Hydro to carry out its business. This is not to say that these directions (such as accounting practises, procurement strategies, environmental studies, safety work plans, public and First Nation consultation, regulatory review/compliance, etc.) are without merit, only that they come at a cost that would not likely be born by a private entity and hence are excluded from AE’s estimates.

BC Hydro faces an tough challenge in attempting to keep rates low and satisfy all entities- it is no longer, in my opinion, just a power producing and distribution company and somehow, somewhere down the line post SRD construction- BC Hydro got charged with rearing fish. So, this is where we are at today and as such these considerations need to be funded by ratepayers.

4. BC Hydro states that the Refurbishment of the SDR is marginally economic and that any risks of replacing that energy energy would be born by an EPA. I did note in BC Hydro’s Final Argument on p.14 that **“BC Hydro affirms that no energy would be acquired to offset the energy loss from ceasing operations”**. I suggest the Commission get confirmation from BC Hydro that this includes no renewal of existing EPAs, in addition to no new EPA contracts , until 2034- the forecasted year of a Load Resource Balance correction. This point this may affect the economics of the Project.

Perhaps BC Hydro can confirm this in its Reply Argument.

5. BC Hydro stated **“the SRD Canal Refurbishment and Fish Passage Improvement Project had an Implementation Cost Estimate range of \$41.1M to \$37.4M to extend the life of the diversion works by 20 years** (BCH response to BCUC IR 1.13.1 Attachment 1, BCH response to CEBC IR 1.16.2) and that **“based on BC Hydro’s average domestic revenue of \$83/MWhthe 47 GWh provided from the SRD represents annual revenues of \$3.9M”** (BCH Response to BCUC IR 1.13.1 Attachment 1, BCH response to CEBC IR 1.16.4).

I submit that by BC Hydro ceasing the SRD operations and surrendering the SRD water license puts ratepayers at future risk of higher rates. It is unlikely that a new water license would ever be granted for the facility and that a new Call for Energy is unlikely to be lower than \$83/MWh- if not now as presented in the Application, quite probably in 10-20 years. This recommendation is linked to 2. above for repairs that have a NPV>1 and considers that:

a) BC Hydro make sufficient repairs to run the Diversion at the currently restricted flow of 15m³/sec. I submit the SRD has value in its present state for the next 20 years and both the Comptroller of Water Rights and DFO presently accept the current 15m³/sec flow (although not ideal).

b) the canal and Pattison Creek flume remain in their present state (with only high priority repairs implemented) and still capture 45 out of the possible 47 GWh/yr (BCH Response to BCUC IR 1.3.1 re: CEABC 1.16.3 and to BCUC IR 1.2.4). I submit that refurbishing the canal in order to return the SRD to its design capacity has marginal benefit i.e. 47-45 =2 GWh/yr to justify the cost at this time.

In order for the Panel to consider this option please refer to BC Hydro’s confidential response to BCUC IR 1.8.3, which was not available to me, hence I had to use AE’s Report which states that in implementing an asset replacement plan **“This plan (assuming no inflation factor applied) would require an average annual expenditure of \$750,000 over the 50 year life** (Exhibit B-1, Appendix E, AE Report, Executive Summary, pp.3-4). I expect that even when AE’s cost estimates are fully loaded by BC Hydro, the annual AE recommended expenditures would be in the upper range of some \$2M/year- far less than the \$3.9M/year loss in revenues by ceasing operation of

the SRD (until the canal needs major refurbishment). If BC Hydro's estimates are materially different- I suggest BC Hydro be asked for clarification.

6. I further recommend that BC Hydro look to other strategies to meet its obligation to First Nations and other stakeholders to enhance adult returns in the upper Salmon River- such as, but not limited to:

a) contracting First Nations or other contractors to manually trap adult fish in the lower pond and transfer them to just above the dam when flow conditions warrant such assistance. One off automated systems, yet to be designed, are unproven, come at a high cost to design and implement, and are often unreliable i.e an engineered solution may not be the best solution.

b) contracting First Nations or other contractors to operate and/or clean the fish screen (as is done now) and operate the main and lower sluice gates as flow conditions warrant- as opposed to BC Hydro using its own workforce which have competing priorities and as such the fish may not get priority attention.

The evidence presented suggests b) will improve fish passage both upstream and downstream thereby delivering on BC Hydro's commitments discussed in 1. above.

I would anticipate that such annual contract(s) would be in the order of 1 to 2 person years of labor plus expenses (mainly a vehicle and some fish nets) and would be in the range of \$200,000 to \$250,000. Note that SRD operating expenses are already included in rate base- how much may have been disclosed in the Application, however I do not have a search function for the lengthy document for comparison purposes.

7. I also recommend that the Panel request BC Hydro "look out of the box" when considering it's options for the SDR. It is unfortunate that there was only 1 round of IR's otherwise I would have asked BC Hydro to look at other strategies in respect of the SRD refurbishment options. For example- did BC Hydro consider a partnership with Inpower (the contractor for the new John Hart), First Nations or others to take over the SRD and be compensated for the actual volume of flow deliver to Brewster Lake? I suspect that a private entity would come up with creative solutions at far less cost than replacing like-for-like as is normally done by BC Hydro (options as screw piles or marine driven piles to anchor the Dam facing come to mind). This would probably mean BC Hydro surrendering the SRD water license and a few other implementation problems, such as the duty to consult and accommodate with First Nations- but FN's might be receptive if they saw a revenue stream coming from the SRD which would be under their control to made tradeoffs and comply with the CWR and the DFO.

8. It is important to note that the Application did not state any negative impacts (that I could find in the Application) of inter-basin fish transfers due to disease or genetic degradation. BC Hydro also stated "**There are no orders or regulations that require BC Hydro to improve fish passage at Salmon River diversion**" (BCH response to BCUC IR 1.4.6)- hence I submit that the environmental drivers of the Project do not appear to be supported by evidence. Also, BC Hydro is operating under a duly authorized water license with no evidence presented that indicates that its SRD operations have affected the historical returns of Coho and steelhead in the upper Salmon River basin (indeed- when the SRD was constructed there were none -see BCH response to BCUC IR 1.15.13)- only that there is potential for improvements in rearing and spawning habitat should the dam be removed. I also note there was no discussion on the opportunity for these enhancements in the White River basin or other local rivers which could be funded, in whole or in part, by BC Hydro under existing programs (such as the Bridge- Costal Fish and Wildlife Restoration Program) if the conditions are favourable and economic.

9. Although not discussed in the Application, or submitted in an IR, the 500kV undersea cables from the mainland to Vancouver Island (circa 1980), are probably reaching end of life. As such this will be a very costly replacement project (in the billions of dollars) and I would anticipate many IR's asking if all economic potential generation resources have been developed on Vancouver Island. I submit retaining the SRD will prolong these cable replacements- albeit only marginally, however, the SRD is by my calculation the equivalent of a 5MW base load plant with a service factor of some 5,000 homes (this is not small change). Please consider this tradeoff in the Panel's deliberations (it is recognized that BC Hydro counsel will object to this and argue that it is inadmissible since it was not tested during the hearing, however there was only one round of IR's).

In conclusion, it is evident that BC Hydro has worked diligently to address the SRD Upstream Fish Passage Technical Committee's (Committee) concerns as described in the Application (page 21) and that all of the entities represented on that committee have provided letters of support for the Decommissioning Alternative (BCH Response to BCUC 1.15.12 p.2).

However, I submit that the SRD assets have remaining life of some estimated 20 years (subject to minimal investments that have a NPV >1) and that the concerns of the Committee can be addressed by the Diversion's flows remaining limited to 15m³/sec (for plant condition and smolt concerns), and that services be contracted operate the main and lower sluice gates or to transport adult spawning fish above the SRD dam and to clean the fish screen all when required. I submit the expected benefits of permanently ceasing operations and abandoning the SRD are insufficient to relinquish \$3.9 million dollars in annual revenue and that the Application does not serve the greater public interest- hence I oppose the Application.

Respectfully submitted by Roy Bishop- registered Intervener C2-1