

State of Washington
Department of Fish and Wildlife
3860 Chelan Highway 97-A
Wenatchee, WA 98801

July 14, 2009

Waikele Hampton
Environmental Coordinator
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Wenatchee, WA 98807

Draft Rocky Reach Hydro Project Operations Plan

Dear Waikele:

I have reviewed the draft Rocky Reach Hydro Project No. 2145 Operations Plan (OP) required by New License Article 402, but not any of the accompanying extensive appendices. The changes I suggest are indicated by **bold** print.

Executive Summary, page ii, 2nd paragraph, 5th and 6th lines: "... turbine units 1 and 2 will operate at a soft-limit of 12 to 12.5 kcfs". Is this discharge amount for each individual unit or both units together? This should be clarified.

Page ii, 8th line: "This can be used as a tool to enhance adult fish passage at the left (**i.e., looking downstream**) powerhouse entrance as necessary".

Page ii, 4th paragraph: "Rocky Reach Dam normally provides spill for juvenile salmonid passage to cover 95% of the juvenile summer Chinook migration (insert **also see "CH-0", Table 3, page 10**) in accordance with the criteria".

Page ii, 4th paragraph: "Depending on annual survival study protocols, spill may also be provided to cover 95%" of the juvenile sockeye salmon migration (**also see "SOCK", Table 3, page 10**).

Introduction. Page 1, 2nd paragraph, 2nd sentence, 3rd line: "... The dam consists **of** a forebay wall,". This second sentence in the paragraph is *very* lengthy. I have heard such referred to as a "freight train sentence". It is unnecessarily long ... *nine* lines. Generally, a sentence should not be more than three lines in length. "Flow" and reader comprehension is enhanced when sentence length is controlled. When there are several discernable parts (such as successive, different or somewhat different thoughts) within a very lengthy sentence, then a semi-colon (;) or period (.) can be used to indicate a break between such parts, rather than a comma.

Page 1, 2nd paragraph, 9th line: "... each 125 feet high by 60 feet wide; **and** east bank seepage cutoff,". The "and" is necessary in this case to couple the last car to the train.

Page 1, 2nd paragraph, lines 12 through 22: It is recommended these 10 lines be broken into several discernable parts. It might be done as in the following manner.
"... The upstream migrant fishway has three main entrances. **These are** located between spillway bays 8 and 9; at the center dam adjacent to powerhouse unit 11; and at the powerhouse service bay between turbine unit 1 and the west shoreline. **There are also** several submerged orifice entrances at each end of the powerhouse. Fish pass from the entrances into fish collection channels which converge to guide fish to a pool-and-weir fish ladder. **There is** a counting station at the fishway exit **located** near the west shoreline. Attraction water for the powerhouse fishway entrances is provided by three hydraulic turbine-driven pumps with a total capacity of 3,500 cfs. **A** gravity intake provides attraction water for the spillway entrance. The juvenile fish bypass (**JFB**) system includes a surface collection system; turbine intake screens and collection system for turbines 1 and 2; a bypass conduit to the tailrace; and a fish sampling facility".

Page 2, paragraph 1 (excluding the italicized *Operations Plan* quote from the New License), next to last line. "The RFFF will be responsible for participating in **the development of** and implementing the Adaptive Management approach".

Page 2, paragraph 2, next to last sentence (following *O. kisutch*). "An HCP Coordinating Committee, consisting of one member from each of the **signing Parties**,".

Page 5. 3. JUVENILE FISH BYPASS SYSTEM (JFB)

3.1 Facilities Description (3.1.1-3.1.4). The description of the JFB is very detailed and no doubt, very accurate. Reading it was also exhausting to this reviewer. The number of acronyms may be mind-numbing for readers not familiar with the system and could interfere with comprehension. I think some the potential comprehension- misery can be eliminated (or largely neutralized) by eliminating the acronyms and using the complete names of systems. Also, the written presentation (and reasonable reader assimilation of this material) deserves an accompanying good drawing which clearly illustrates how this system functions.

3.1.2 Page 6, Intake Screen System, 1st paragraph, lines 1 and 2: "... is through the turbine intakes for units C1 and C2". ("unit" should be plural).

Page 6, 2nd paragraph, line 2: "(VBS)" and "screens" should be transposed.

Operating Criteria and Protocol

3.2.2 Operation Procedures. Comment: “The JFB has been designed to provide fish guidance and bypass for river flows from 0 to 425 kcfs, over forebay elevations ranging from 703 to 707, and over tailwater elevations ranging from 612 to 636 feet”. Attaining the flexibility to be able to do this over such a wide range of river conditions must have been quite challenging design-wise. Is the conceptual JFB completed and operational? How long has the JFB been operating, in its present state of development,? How effective and reliable has the Juvenile fish Bypass System proven, and over how long a period? Providing safe passage of young anadromous fish past a large hydro dam is a matter of high-order responsibility for an operating entity. The development and operation of a seemingly successful and safe fish bypass system in a mainstem dam on a major stream is a notable achievement. For the benefit of the fisheries resource and other parties involved in this field, this achievement deserves a written, candid history of Chelan PUD’s agony and ecstasy experience in this endeavor.

4. DESCRIPTION OF SPILLWAY OPERATING CRITERIA AND PROTOCOL

Page 9, Table 2, Spilling Schedule for Rocky Reach Dam: I suggest the “Total” column be labeled “Total feet open”.

4.3 TDG Monitoring and Control

Page 11, 1st paragraph, hyphenate at line 10: “... when consistent with a department-approved gas abatement plan”.

Page and paragraph same as above, @ line 12: “... must not exceed an average of 120% as measured in the tailrace of **that same next dam downstream**”.

References, page 15

The “y” in Rocky (Reach) is omitted in the 2nd and 5th citations.

Yours truly,

Tony Eldred
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