

Columbia River Regional Forum
SYSTEM CONFIGURATION TEAM MEETING
April 20, 2017

1. Introduction

Representatives of NOAA, the COE, BPA, NPCC, Idaho, Warm Springs Tribe and others participated in today's SCT meeting chaired by Bill Hevlin, NOAA. Comments on the March 16 SCT notes are due soon. Sondra Ruckwardt, COE Portland, joined SCT by phone to describe the "2406" turbine blade blocking program in relation to agenda item 4 (see below). There were no further additions to today's agenda.

2. Review Updated FY 2017 CRFM Spreadsheet

Randy Chong, COE, distributed copies of both the ranking and prioritized FY 2017 CRFM spreadsheets and said there has been no change since last month.

Today's meeting focused on the prioritized version of the spreadsheet which shows the projects in ranked order. Not all of the \$84 million in the President's budget for CRFM in 2017 is accounted for on this list, so there is more than sufficient funding for all projects on the FY17 spreadsheet regardless of rank. The COE will use some of the extra FY17 funds to purchase tags and accelerate other costs in preparation for FY18 work.

The only item advocated as a potential addition to the FY17 spreadsheet at last month's SCT meeting was modifications to the Lower Granite trap. It's not on the spreadsheet, Chong said, because the COE does not view it as a CRFM funded item. BPA's fish and wildlife program funded the last LGR trap improvements and this request should be funded the same way. Russ Kiefer, Idaho, said this funding issue may be a candidate for elevation to RIOG for policy level resolution because the information collected at the LGR trap is critical to recovery efforts under the BiOp. Without the trap, reasonably accurate estimates of adult wild steelhead returns to the middle fork of the Salmon River would not be possible. This information is necessary to demonstrate that federal hydro system facilities are avoiding jeopardy to wild Salmon River steelhead.

Before referring the issue to RIOG, Chong (or Ian Chane after Chong retires) will consult with COE policy decision makers again. Scott Bettin said the trap has multiple purposes and is not solely a BPA responsibility. Christine Peterson, BPA, suggested looking at whether problems at the trap are caused by high river temperatures or design of the trap itself.

Idaho and NOAA will draft a position paper by May 18 that explains the importance of LGR trap modifications. SCT and FFDRWG will review it before sending it to COE decision makers as support for funding improvements to the trap.

The Lower Granite ladder is the only one on the Snake that doesn't have volitional passage, which is an issue in late summer and early fall if temperatures rise, Trevor Conder said. If the forebay is too warm, fish may try to go back down the ladder and re-ascend in the

morning, which they are prevented from doing by the diverter gate at Lower Granite. Modifications to the trap are needed for this reason, NOAA and Idaho agreed. Kiefer estimated a feasibility study of trap modifications could take a couple years and further analysis is needed, including the evaluation of remedies, which could begin in 2018 with funding from CRFM. If an emergency trap and haul operation is needed in future like it was in 2015, the facilities at Granite would most likely be part of the solution, and the same is true at Ice Harbor. IDFG's emergency trap and haul plan, posted on the TMT web page, has further details, Kiefer explained.

3. Update on Feasibility Study of Spillway and Sluiceway PIT Detection Alternatives

Plans are being made for what the COE needs to do for a gas cap spill test next year, which seems likely, Chong replied. Higher detection levels could be part of these plans. COE decision makers have expressed concern about what will be gained by installing PIT detection in the BON powerhouse #1 sluiceway. Derek Fryer, COE Walla Walla, said increased spill will reduce collection efficiency through the bypass, so an alternate means of detection will be needed. See section 5 of these notes for more PIT tag discussion.

4. Evaluation of Alternatives for Turbine Blade Blocking

Sondra Ruckwardt, COE Portland district, manages the "2406" program of turbine blade blocking. She talked about coordinating it in relation to the turbine survival program (TSP).

Ruckwardt distinguished between blade blocking, which applies only to older units, and the turbine survival program (TSP), which rehabilitates old units using a more "fish friendly" design. (Russ Kiefer advocated use of the term "fish considerate" because no high-head turbine is "friendly" to juveniles passing through it.)

Turbine rehabs are happening at Ice Harbor, McNary and John Day dams. The Ice Harbor installation is farthest along, followed by McNary. Work at John Day is in the scoping phase with NOAA experts involved in design of units for fish passage.

Meanwhile, a number of the older units are going to need blades blocked because the hinges are wearing out. Chong, who is retiring in a few weeks, noted that a turbine repair strategy contract should be set up to avoid last minute emergencies.

Today's agenda says turbine blade blocking will be funded under BPA's large cap program, not CRFM, although it is part of the TSP. After discussion it became unclear whether funds would come from BPA's fish and wildlife program or the TSP, which is funded by CRFM.

Conder underscored NOAA's concern that the blocks be hydraulically designed for fish passage. Kiefer recalled there were good reasons for blocking the LGR priority turbine at the higher end of 1% for adult passage, but during the low flows of late summer it led to a dilemma: should the priority unit be dedicated to adult passage or to provide spill for juveniles? With the angle at 1%, it couldn't do both. Kiefer emphasized that a number of the people who have worked on turbine blade blocking and fish passage will be retiring soon, so it's imperative to document what they know about the ramifications of such choices.

There will be more to come on this. Ian Chane said he will investigate whether funding should come from CRFM through the TSP or from BPA and report back at the next SCT meeting June 15.

Discussion turned to temperature modifications for adult passage at Little Goose. Due to lack of response to the recent bid solicitation, upper ladder and exit cooling at Goose will be similar this summer to what was provided in 2017, Chong reported. But that's not a problem because double testing is done every other year and 2018 is an off-year. By 2019, LGS will have a permanent electricity source to power the pumps. Conder asked whether it would be feasible to do double testing in September when temperatures begin to drop. Scott Bettin replied that creates adult attraction issues because the powerhouse is down for double testing. The goal is to schedule double testing when adult passage is at its lowest.

5. Discussion of Implementation and Evaluation of 2018 Court-Ordered Spill Increase (Includes Use of FY 2017 Funds for Model Preparation of Spill Pattern Changes)

Kiefer characterized this as injunctive relief for increased spill, rather than a spill test, and recommended the test be postponed until spillway PIT detection is installed in order to better measure the results. In the meantime, injunctive relief will occur next year. If detection could be fast-tracked, it would be helpful in evaluating effects of increased spill on juvenile outmigration.

Hevlin asked whether support to develop and evaluate next year's Court-mandated spill increase is on the 2017 spreadsheet. Not yet, Chong replied. Support for ERDC modeling updates will be needed, which also aren't on the spreadsheet and need to be covered. Seven of the 8 models are still functional although they all need minor repairs. The Bonneville model only includes the spillway, not the whole project configuration. The John Day model is the only one needing replacement in order to be considered functional. It covers more miles of river than the other models do, and the size ratio of 1:80 is not very accurate; it should be replaced by a 1:40 model. (The McNary model, for example, is 1:55, and the BON spillway model is 1:40.)

There was agreement that developing an accurate model can take more than a year. The first cut of the John Day model should be available at ERDC for agency review in January/February 2018. Eppard will add this topic to the next FFDRWG agenda and give an update at the June SCT meeting.

There was discussion of how gas cap spill, if ordered by the Court, might affect spill patterns. Gas cap spill at JDA, for example, creates eddies back to the powerhouse. Modeling is needed to document the effects. Portland FFDRWG will discuss BON modeling at its next meeting. According to IDFG analysis of spill patterns on the Snake, a bulk spill pattern should be used at LMN during lower flows and a uniform pattern at higher flows, Kiefer said. The court order currently calls for uniform spill regardless of flow volume.

Eppard asked everyone to send him any reports they have regarding spill patterns studied during recent ERDC trips. Idaho and NOAA both have studies supporting bulk spill at low

flows, which they will provide to the COE and to the court. By the next SCT meeting in June, Walla Walla FFDRWG will have met and identified spill patterns that need further study.

Hevlin asked if SRWG will develop an evaluation of adult passage during the higher spill volume and revised spill patterns for next spring. SRWG is finalizing a one-pager on adult passage, including delay, fallback and re-ascension rates from tailrace to ladder entrance & exit for most of the Snake and Columbia dams, Eppard said. The goal is to identify problem sites for further study. Bonneville and Little Goose are top candidates. The Granite juvenile survival performance test should be postponed until after the RSW PIT tag installation is complete in 2019, Conder said.

Derek Fryer said he will draft a one pager and send out an SRWG report on this topic. There was agreement to add placeholders to the 2017 spreadsheet for spillway PIT tag purchases and spill pattern modeling and development. It was agreed this work is urgent and shouldn't be delayed to 2018.

Apparently sea lions can detect hydro acoustic tags and consumed these fish at higher rates than fish with PIT tags at BON, Conder reported. Kiefer suggested SRWG have a discussion of monitoring methods and survival rates on the lower river.

6. Plan for Ranking FY 2018 CRFM Line Items

With Randy Chong retiring in a few weeks, Ian Chane will assume the role of providing spreadsheets for SCT to prioritize its recommendations to the COE for the allocation of CRFM funds. Chane and Hevlin will prepare a draft 2018 spreadsheet for SCT to begin the ranking process at the June 15 meeting. Chong said the 2018 budget is expected in mid-May, with most projects continuing from previous years. There could be new line items related to increased spill. Kiefer proposed increasing the number of wild steelhead and chinook the IDFG is funded to tag in order to monitor the new spill plan. That would be helpful because detections will decline when more fish pass through spillways, Hevlin said.

7. Updates from FFDRWG and SRWG, Future Meeting Dates

- **May 25 – Walla Walla FFDRWG**
- **June 1 – Portland District FFDRWG**
- **June 12-13 – SRWG review in Portland of preliminary proposals, to be distributed around May 30. In addition there will be special meetings and one-pagers on bypass selectivity and latent mortality outside the typical SRWG funding cycle. These are follow up for adult survival studies; the schedule isn't established yet.**

8. Next SCT Meeting

The May 18 meeting was canceled, making June 15 the next SCT meeting date. These notes prepared by technical writer Pat Vivian.

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