

USACE Fish Facility Design Review Work Group Portland District

January 4, 2018 (0830-1130)
Block 300 – Fireside Conference Room (1st Floor)
333 SW 1st Ave, Portland, OR

Conference Call Information:
Call: (888) 675-2535; Access Code: 7520508; Security Code: 4036

Link to FFDRWG folder: <http://www.nwd-wc.usace.army.mil/tmt/documents/FPOM/2010/FFDRWG/FFDRWG.html>

FINAL MINUTES

Attendance: Sean Tackley, Ricardo Walker, Jon Rerecich, Bob Cordie, Tom Lorz, Brian Bissell, Eric Grosvenor, Trevor Conder, Blane Bellerud, George Medina, Leslie Bach, Leah Sullivan, Brent Welton. **Phone:** Doug Baus, Eric Van Dyke.

1. Group approved draft minutes from 5 October 2017 FFDRWG. No additional comments.
2. Outstanding action items:
 - a. **ACTION:** 2018 spill operations. Baus will discuss internally about updating Table A for BON & LGS and verify that TDA will stay within the spill wall. **STATUS:** Baus provided an update. The Bonneville, The Dalles and Little Goose issues were all addressed, as appropriate, in the Joint Proposed Order currently in the hands of the court, as coordinated with the RIOG and plaintiffs. TDA spill will stay within the 8/9 spill wall.
 - i. Lorz – If rocks not removed from Bonneville, plan may change (Corps didn't have any updates on rock removal). Also, Laurie Ebner was working on a Bonneville 22 kcfs minimal spill pattern needed to support egress from the B2CC. **ACTION:** Update on status needed on these two items (rock removal and B2CC outfall egress spill ops) at FPOM and other forums, as appropriate.
3. Bonneville Major Rehab (Cutts/Lynn/Rerecich)
 - a. Rerecich presented an update. Draft report identified a benefit:cost ratio below 1.0. Need greater than 1.0 to secure funding for design and construction; no funding is available in FY18. If additional funding is made available, the PDT will reexamine the benefit:cost ratio and analysis approach. Once any edits are completed, the report will be distributed to FFDRWG for review and reference.
 - b. Conder – What is the schedule for this project? Rerecich – I don't have the schedule with me, but it was discussed at previous meetings. The project is currently on hold, so original schedule is likely to slip.
4. The Dalles Fish Unit Turbine Rehab (Bluhm/Schroeder/Rerecich)
 - a. Rerecich presented an update. PDT has completed an internal review of the 60% Phase 1a report. Developing costs for alternatives, etc. Draft by March 2018, which would then go to FFDRWG for review.

- b. Lorz – If AWS Emergency Backup system is up and running, could that be used in lieu of one fish unit during rehab work? Rerecich – that will take more analysis and perhaps field testing, but the PDT is looking into that option. Cordie thinks it is close. CRITFC will be watching this project closely.
 - c. Conder – When will commissioning take place? March 2018 commissioning. The group discussed the possibility of additional testing to determine whether the backup system could be used in lieu of a fish unit.
 - d. Current schedule: Complete design August 2019; award contrast in February 2020; Completion in 2022.
 - e. Cordie – TDA AWS backup system construction is ongoing and is going well. Currently pouring concrete.

- 5. Turbine Survival Program (Medina/Rerecich)
 - a. Medina presented an update. Project is winding down in FY18; after September 2018,
 - b. Monthly meetings ongoing; B2 report is being completed and should be available for review.
 - c. Conder – Any updates on what status after this is closed out? Medina – Still discussing with BPA.

- 6. JDA Main Turbine Unit Rehab (Medina/Rerecich)
 - a. Medina presented an update. Phase 1a report underway. Scope is to replace all 16 units with fish-friendly units (approximate cost is \$1B). Phase 1a looks at scope, constraints, etc. March 2019 is target date for completing the Phase 1a report.
 - b. Rerecich – PNNL will be working on modeling associated with the project.
 - c. Units will likely be similar to Ice Harbor, with a mix of fixed blade and Kaplan, based on physical and hydraulic constraints.

- 7. Bonneville B2 FGE (Medina/Knowles/Rerecich)
 - a. Rerecich and Medina presented an update. PNNL completed a draft report on the 2017 study; **ACTION:** Rerecich will distribute the draft B2 FGE study report from PNNL by January 12.
 - b. Lorz would like to have an SRWG conference call on the topic, as the results weren't as expected; comparability with past study results. The group discussed results presented at AFEP, debris issues, hydroacoustics vs. acoustic telemetry tools, etc. Conder – Based on AFEP results, wondering if powerhouse operations should be adjusted (operate B2 to mid-range then shift to B1). Group agreed this should be discussed at the meeting. **ACTION:** Rerecich will schedule an SRWG discussion on the B2 FGE study, as needed.
 - c. Planning to redeploy equipment for Year 2. No significant changes.
 - d. As discussed previously, there is a problem with the bolts that secured the flow deflectors. Bolts are backing out. Solution was developed that involves installing tabs that prevent bolts from backing out; Corps is moving forward with implementation.

- 8. Bonneville B2 Orifices (Medina/Kuhn/Rerecich)
 - a. Rerecich and Medina presented an update. Karen Kuhn has retired. EDR has been completed; will be shelved, based on cost of modifications

- (increase orifice size, etc). **ACTION:** Rerecich will distribute final Bonneville B2 Orifices EDR report to FFDRWG.
- b. Corps had planned to move forward with evaluating operational changes/minor modifications/additional PLC to air burst system. Conder – Do we have the cost of testing/implementing? Concerned that O&M funds aren't available to make the modifications and implement. The group discussed how the Corps will document decisions and the best path forward for implementing suggested modifications and testing.
 - c. Conder asked why the Corps didn't test increasing the burst rate. Rerecich – We did recommend testing this and the PDT provided funds in FY17, but the testing did not occur.
9. John Day Avian Line Improvements – Phase II (Medina/Zyndol/Macdonald)
- a. Medina presented an update. Phase II involves replacing lines, installation of tensioning devices, improve reliability of system.
 - b. Completion around the end of March 2018.
 - c. Lorz – What is new material? Medina – Similar to last polymer material, but this is the next generation. Lorz concerned about handoff to project and lack of O&M manuals that happened last time. Medina – PDT is working closely with JDA project staff on this project.
10. Lamprey Wetted Wall – Bradford Island Ladder (Tackley/Walker/Bissell)
- a. Tackley presented an update; Walker showed some isometric design images. Bonneville project staff are designing and fabricating the structure based on the FERL design and a site visit with NOAA (Kinsey Frick, Mary Moser, Steve Corbett). Design shown is being finalized; will be distributed for FFDRWG review soon. Tackley requests quick review so fabrication can start (need to install by end of IWW period).
 - b. Tackley, Walker and Bissell discussed two options for the wall-mounted plating and attachment hardware. Group agreed that Option 1 (1/4-in. plating with recessed bolts) is preferred design for the climbing portion of the structure.
 - c. Conder – Will there be any water dripping/splashing from hood? Tackley – could be rooster tails when lamprey are on the structure. Conder concerned about the potential for jumping/false attraction. Tackley recommends eliminating the downstream-facing portion of the shroud (leaving the sides and top) to address this potential issue. Lorz and Conder agreed; Lorz noted that additional material could be added later if a problem is observed. Walker reminded the group that we can turn the structure off if we see issues. **ACTION:** Corps will eliminate the downstream face of the wetted wall crest shroud design.
 - d. Van Dyke – No comments at this time, but will review the design when it is distributed.
 - e. Tackley still wants to do site visit in Spring 2018 so managers can see the structure in operation under different flows.
11. Lamprey Passage Structure (LPS) project (Turaski/Schroeder/Walker/Welton)
- a. Walker and Welton presented on a John Day North Ladder LPS gravity water supply concept in development. Removes large, fry criteria screen to a box on the outside of the fishway, with intake and two outlets (to keep within diffuser velocity criteria of 1 fps) in ladder (in turning pool and a weir

- pool). Proposing $\frac{3}{4}$ " grating on intake and outlets to preclude adult lamprey and other larger fish from getting in. Expecting sweeping velocities in ladder to minimize entrainment of debris. A 2-in. line would then feed water to the LPS below.
- b. Bellerud – If juvenile salmonids do get in the structure, need to consider egress and the $\frac{3}{4}$ " grating design. Would they be able to get out on the downstream end? Conder – Also, if there is debris build up over time on the downstream end, will this present backup issues? Group discussed potential design solutions for accessing the downstream outlets in the event that they are clogged with debris. Could back flush and/or install a removable piece that allows cleaning outside of passage season.
 - c. Bellerud – There is a Y connection between the two outlet pipes. This could present another debris issue. Welton – We've been discussing that. Conder – Why not just have two pipes from the box for the outlet and/or just have one large pipe? Welton – Could modify the design out of the box, but limited to two pipes due to risk of rebar interaction of larger (8-12 inch) pipe.
 - d. Lorz – How much water are you taking out of the ladder? Welton – Up to 60 gpm needed for the LPS. Conder – Are there any impacts on water depth over overflow weirs? Welton – Impacts would be negligible.
 - e. Welton – Constructability is another factor in this project due to very difficult to access to tailrace deck area. Could build this new concept using scaffolding brought down elevator rather than large crane.
 - f. The group discussed alternatives. Alternative approach would be to use pumps, but the current pump location doesn't work. Welton – Would be pulling water out of AWS, either from Diffuser 1 or Diffuser 2 chambers. Would install a winch that is attached to the fishway rather than using a crane to pull pumps for maintenance. Grosvenor – Generally likes the box concept better than pumps from an O&M standpoint. There is an advantage of not having to deal with electrical or mechanical (crane or winch) issues of pumps.
 - g. Conder – Seems like there is slightly more risk of this design relative to pumps, from a salmonid standpoint. Conder and Bellerud would like Ed Meyer (not present) to review and comment on the new design concept. Conder verified that Meyer had received the design but hasn't reviewed yet.
 - h. Van Dyke – No comments at this time, but will review the design when it is distributed.
 - i. Schedule: Walker will distribute 30% design for review,. Due date for comments will be next Friday (1/16/18). Need to move to 60% design ASAP (current target is January 25).
 - j. **ACTION:** Walker will distribute the preferred gravity water supply design concept for FFDRWG review. Due date for comments is January 16.

Next NWP FFDRWG Meeting: 1 March 2018, from 08:30-11:30