CENWP-PM-E 05 October 2017

MEMORANDUM FOR THE RECORD

Subject: Final minutes for the 05 October 2017 FFDRWG meeting.

The meeting was held in the Fireside Conference Room of the USACE office in Portland, OR. In attendance:

Last	First	Agency	Email
Ament	Jeff	NWP	Jeffrey.M.Ament@usace.amry.mil
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Link to FFDRWG folder:
http://pweb.crohms.org/tmt/documents/FPOM/2010/FFDRWG/FFDRWG.html

1. Final decisions made at this meeting.
   1.1 Meeting minutes from 7 September FFDRWG are pending for one additional week.

2. Outstanding action items:
   2.1. ACTION: Ebner will write up the method for examining the effect of the two different elevations of the Bonneville spillway flow deflectors. **STATUS*: An ERDC model report on the Bonneville deflectors is attached. The figure at the end shows the jet behavior given different Q and submergence. Q is per bay and submergence is TW minus the elevation of the deflector. Bays 1,2,3,16,17 and 18 are at elevation 7 and the rest are at elevation 14. For a TW of 24 feet submergence on a 7 foot deflector is 17 feet and for a 14 foot deflector is 10 feet.***

Ebner presented a graph on the different flow deflector's submergence vs discharge and the resulting hydraulic outcome.

2.2. **ACTION:** The Corps (Ebner/Rerecich) will see if past BON trip reports are available and will distribute to the group. **STATUS:** ***Past BON ERDC trip reports and other supporting materials were distributed to the spill modeling participants on 9/13/17 via email and the FPOM website –*** http://pweb.crohms.org/tmt/documents/FPOM/2010/ERDC%20Trip%20Documents/index.html

2.3. **ACTION:** Walker or Tackley will check on the expected flow range (max and min) for the wetted wall structure and provide this information to FFDRWG. **STATUS:** ***In progress. Will be discussed under wetted wall. Tackley will set up a site visit after it is built and then adjust the flow rate out in the field.***

2.4. **ACTION:** Rerecich will update the TDA East Fish Ladder AWS Backup construction MOC and coordinate with FPOM on the proposed changes. **STATUS:** ***MOC updated and sent to FPOM on 9/7/17. TDA-E vibration monitoring coordination on schedule. PNNL is installing equipment 05 October in the agreed upon locations and an additional monitoring spot above the junction pool. PNNL will collect data for a week to determine the background levels. They also will use this week to figure out how fast the data can be processed. How long a spike in noise needs to last to trigger spill still needs to be determined.***

3. Lamprey Passage Structure (LPS), Minor Mods, and Wetted Wall (Turaski/Schroeder/Walker/Tackley)

3.1. BON - The Minor Mods project just awarded the Phase 2 contract in August. The decision to move the lamprey orifices up one weir has not been made yet. Entrance weir caps are being installed at TDA and WA SH. JDA-S requires the top being smoothed out before the weir cap can be placed on top. The rest box that came loose in the BI ladder needs to be removed and other boxes tested to make sure they are solidly in place. The BON AFF lamprey trap will have a 12" ramp but this design caused an increase in velocities by 14% around the ramp. If lamprey don't use the trap then the PDT will consider making it bigger. At WA SH, a hydrofoil was built behind the ramp to streamline the flow around the ramp. Schlenker said it could work here but it is a little different. The ramp is open underwater. The water coming through the orifice has minimal interaction with the ramp because it is 18" to the orifice. Eddies around the ramp will be minimized and may require a potential modification to the structure. FFDRWG members would like to see these potential modifications. The timeline is tight to have the trap installed by March.

3.2. TDE trapping behind picket leads – The PDT is proposing a trap similar to the AFF instead of the current pot traps. There could be hydraulic changes from the trap that need to be looked at.

3.3. JDA waters supply – There is a proposal to use gravity to feed the LPS from the fish ladder instead of pump water. This would greatly reduce O&M costs but require a hole in the ladder with a screen. The LPS would operate just during the trapping season. A brush or other cleaning method would be required for the screen to clear debris which is in an inconvenient location. There is a second option of a drain valve used during dewaterings coming from the under the count station gratings but it has a ¾" rack and not fully screened. Potentially fish could get into this drain pipe and get stuck there. A pump from Bay 1 was considered. The existing pumps require a lot of work for maintenance and would have to be moved near the LPS. The gravity fed system would be simpler and

more cost effective. The amount of debris that would build up against the screen is unknown.

4. Wetted wall sketch will be updated and then sent out to the group. The refuge box on the floor has been eliminated. Fish would only encounter a 1" conduit running down the side of the wetted wall. The wall will be sheet metal attached to the wall. The only concern brought up is the distance from the water to the start of the shroud. The shroud could be mesh or see through to protect from birds but can still collect video data.

5. Sept. 18-20 Bonneville and The Dalles ERDC spill model post-trip discussion (All) – The COE has received trip reports from NOAA and Shaver but are still waiting on the other agencies reports. The FPP BON spill pattern for 175kcfs at 24' TW created pockets of slow egress for juveniles. Ebner recommends changing the spill pattern at higher flows when spilling to the gas cap. In January when there is slow time on the JDA model, the BON pattern can be manipulated. On the trip, flat patterns were looked at but hydraulic conditions were not as good as the current spill pattern. The FPP pattern is a good up to 150kcfs but above that it needs to be slightly adjusted. All spill patterns have to be GDACS capable and need to work at the range of TWs that would exist in real life conditions. The preliminary data from BON spill survey was presented. The team will do a comparison with the 2013 survey. Rocks have moved into Bay 15 and 16 but the pile at Bay 17 is unknown. It could be sturgeon, rocks or data that has to be cleaned up. An ROV will be needed to verify if the pile is sturgeon. The repair of BI looks really good. Damage to the baffle blocks is not as important as damage to the ogee area. An issue to watch is the break line on the WA SH side. An emergency contract for rock removal is in the initial stages. For this year, BON hit the spill volume threshold for a survey and TDA was already scheduled. In 2011, BON was moved to a lower priority on the project list of forced spill because of the rocks movement. Rocks move at different speeds under different flows. The COE needs to look at the different surveys and make recommendations on spill levels for the future to prevent rocks from moving. No rocks are coming from upstream. There is 3,000 cubic yards of material that is shifting around and how to get rid of it is a puzzle. Ebner wants to change the priority list for spill during times of excess water beyond power capacity to a maximum of 150kcfs at BON or just spill at a different project. This project spill priority list has no impact on the spill for juveniles.

6. TDA trip report – The group reviewed flows starting at minimum gate openings all the way through maximum opening under different tail water and did not see anything different than expected. The egress for flows within the wall was fast and fluid. There were subtle difference in the hydraulics but no major concerns. Erosion issues at lower tail waters with higher flows will be monitored. The survey results will come out later. This trip allowed for everyone to view over 400kcfs of spill including outside the spill wall. The ice and trash sluiceway egress was added on. The egress was not great but the model was not as accurate as it could be. Baus said that the revised gas cap numbers should keep all flow within the wall at TDA and under 150kcfs at BON. Table A (shown on the web meeting) is from a final document provided to the court but new tables will be worked out. ACTION: Baus will discuss internally about updating Table A for BON & LGS and verify that TDA will stay within the spill wall. The egress from the bays outside the wall had some eddies and was not as fluid as within the wall. The COE will be trying to keep all spill within the wall and only in the most extreme cases go outside. In addition to the poor egress, most fish are going through the southern bays which means that if a bay outside the wall opens then a large portion of the juveniles would be pulled to this higher predation area. The recommendation is to spill to the maximum within the wall instead of going to bay 12.

Next NWP FFDRWG Meeting: 7 December 2017, from 09:00-12:00 (*Tentative*)