CENWP-OD 14 November 2013

MEMORANDUM FOR THE RECORD

Subject: FINAL minutes for the 14 November 2013 FPOM meeting.

The meeting was in the Columbia Room (12th floor) at the new CRITFC building. In attendance:

Last	First	Agency	Office/Mobile	Email
Baus	Doug	USACE-RCC	503-808-3995	Douglas.m.baus@usace.army.mil
Bailey	John	NWW		John.c.bailey@usace.army.mil
Bettin	Scott	BPA	503-230-4573	swbettin@bpa.gov
Conder	Trevor	NOAA	503-231-2306	Trevor.conder@noaa.gov
Cordie	Bob	NWP-TDA	541-506-7800	Robert.p.cordie@usace.army.mil
Dugger	Carl	NWW-MCN		
Faber	Derrek	ODFW		Derrek.m.Faber@state.or.us
Fielding	Scott	NWW		Scott.D.Fielding@usace.army.mil
Fone	Ken	USACE-NWW	509-527-7140	Kenneth.r.fone@usace.army.mil
Fredricks	Gary	NOAA	503-231-6855	Gary.fredricks@noaa.gov
Fryer	Jeff	CRITFC		Fryj@critfc.org
Hausmann	Ben	NWP-BON	541-374-4598	Ben.j.hausmann@usace.army.mil
Hockersmith	Eric	NWW		Eric.e.hockersmith@usace.army.mil
Hevlin	Bill	NOAA	503-230-5415	Bill.hevlin@noaa.gov
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Lorz	Tom	CRITFC	503-238-3574	lort@critfc.org
Kiefer	Russ	IDFG	208-334-3791	Russ.kiefer@idfg.idaho.gov
Kostow	Kathryn	ODFW		Kathryn.E.Kostow@state.or.us
Mackey	Tammy	USACE-NWP	503-961-5733	Tammy.m.mackey@usace.army.mil
Martinson	Rick	PSMFC		rickdm@gorge.net
Moody	Greg	NWW		Gregory.p.moody@usace.army.mil
Petersen	Christine	BPA		chpetersen@bpa.gov
Rerecich	Jon	NWP-PM-E	503-808-4779	Jonathon.g.rerecich@usace.army.mil
Sands	Jack	NWW	509-527-7287	jack.p.sands@usace.army.mil
Setter	Ann	USACE-NWW	509-527-7125	Ann.L.Setter@usace.army.mil
Stansell	Robert	NWP-FFU		
Statler	Dave	Nez Perce		
Trachtenbarg	Dave	USACE-NWW		David.A.Trachtenbarg@usace.army.mil
Warf	Don	PSMFC		dwarf@psmfc.org
Wells	Steven	PSU		
Weston	Dwayne	NWW		
Whiteaker	John	CRITFC		whij@critfc.org
Wright	Lisa	USACE-RCC	503-808-3943	Lisa.S.Wright@usace.army.mil
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Zyndol	Miro	NWP-JDA	541-506-7860	Miroslaw.a.zyndol@usace.army.mil

Dugger, Fone, Kiefer, Statler, Trachtenbarg, Warf, Weston called in.

October birthdays include: Lorz, Whiteaker, and Bettin. HAPPY BIRTHDAY!!!!
November birthdays include: Mackey, Ebner, Meyer, Klatte, Schwartz, and Zorich.
HAPPY BIRTHDAY!!!!

1. **Finalized results from this meeting.**
   - **1.1.** FPOM sang Happy Birthday to Bern. Unfortunately this was not captured on the audio.
   - **1.2.** September FPOM minutes approved.

1.3. LWG Unit 1 re-build. *FPOM was not enthusiastic with the August outage for LWG. They recommended a September start time.*

1.4. BON LED testing. Hausmann referred FPOM to the attachments sent out with the agenda. He said BON has some spare bulbs on hand; they could test them now if FPOM approves. **FPOM agreed that BON should put in the LEDs that are on hand. Unit 18 will be the test unit.**

1.5. FFU Kelt monitoring plan. Fredricks had some concerns between FFU and PSMFC. Martinson said he will talk with DeHart about SMP personnel reviewing the tapes on the weekends, when FFU isn't working. Klatte brought up the concerns regarding the trigger. BPA believes the video will increase the accuracy of the counts and therefore the trigger may need to be adjusted. Lorz and Fredricks quickly were fired up about the suggestion that the counting accuracy should somehow influence the trigger. **FFU will install the new monitoring equipment. The trigger discussion will occur on another day.**

1.6. TDA ITS gate configuration. Cordie said Fenton Khan suggested opening two over Unit 8 and just one over Unit 18. **FPOM says go with Fenton's recommendation.**

1.7. Memos of Coordination

1.7.1. 13BON89. NWW Hydrofoil Testing at B2CC. ***Pending.***

1.7.2. 13JDA04. JDA-S two-week extension. ***Pending***.

1.7.3. 13LWG17 Juvenile Fish Collection Channel Upgrade. *Generally approved with some work still needed on the specific operation details.* Fielding would like concurrence to shut off the collection channel so he can proceed with the contract language. Bettin said BPA is generally agreeable to the proposed plan.

2. The following documents were provided or discussed. Documents may be found at http://www.nwd-wc.usace.army.mil/tmt/documents/FPOM/2010/

2.1. *Agenda, Fish Passage O&M Coordination Team.*
2.2. *Cooling Water Strainers Lamprey Counts.xls.*
2.3. *BON LED documents.*
2.4. *BON JMF kelt monitoring proposal.*
2.5. *CRITFC PIT tag memo.*
2.6. *Foul release coatings documents.*
2.7. *TDA fifteen mile creek.*
2.8. *TDA spill test documents.*
2.9. *Coordination/Notification Forms (NWW/NWP)*
2.10. *FPP change forms. (NWW/NWP)*

3. Action Items

3.1. NWW Action Items.

3.1.1. [Sep 13] LWG Unit 1 return to Kaplan. Conder asked about re-welding the blades at a different angle. Lorz asked for more information on scheduling issues from the Corps. **ACTION:** D. Weston (Chief of Technical Support Branch) will provide updates at the November FPOM. ***STATUS:*** *Weston, Chief of Technical Support Branch for NWW. Weston gave a brief description of who makes up the Technical Support Branch. Weston gave a description of Baldwin Lima Hamilton (BLH) units. These units may be found at LWG, LGS and JDA. After 30-40 years of operation, there is a linkage in the unit that fatigues and fails. The unit will run fine for years and then the linkage will just snap. The linkage is what holds the blades in position. When it breaks, the blade begins to spin and usually ends up in a flat position and scrapes along the wall while the unit is running. Inspections can reveal cracks and signs of wear. A study helped develop criteria for often inspections should occur and what should be done about the units. Some units might require blocked (fixed) blades*

as a temporary fix while working to return the unit to Kaplan. Other units might require permanently blocking blades. Blocking blades require unwatering units and welding blocks in place to hold the blade in position. The welds have to be strong enough to hold the blade in position but still be removable sometime later when the unit is returned to a Kaplan unit.

3.1.1.1. *Setter noted the blade angle was chosen by the TSP group. FPOM wanted more information on the rationale for the 29 degree angle for the blades. LWG has a 29 degree angle. Weston said the 1% restriction was the target so 29 degree was considered a happy medium for staying within the 1% year round. Lorz expressed frustration at the blade angle and how the angle could impact fish passage. Setter said she hears FPOM wanting upfront coordination before blocking blade angles on priority units. Weston was very receptive to hearing input from FPOM. He said he would like to see the units fixed and returned to full Kaplan operation.*

3.1.1.2. *Kiefer commented that is seems NWW made decisions based on fish safety within the turbine environment while fish managers are trying to work to keep fish out of the turbines.*

3.1.1.3. *Re-weld blade schedule. Goal for BLH units was to rebuild one a year. LWG crane maintenance is going forward. LGS crane maintenance is going forward. LMN Unit 1 will be started in 2015. LWG Unit 1 will be started in August 2015 and be completed in 2016.* ***FPOM was not enthusiastic with the August outage for LWG. They recommended a September start time.*** *Everyone understands there are policy issues to be discussed regarding summer operations in the Snake River. Fredricks asked if there has been an effort to develop an alternative path for summer operations. Alternatives might include re-welding the blades at a different angle. Weston commented that he looks at all of the missions when deciding how to operate the powerhouse. Hevlin noted that ERDC is just finishing a new LWG tailrace model. He expects to be able to go to ERDC and develop new spill patterns for summer operations.* ***ACTION:*** *schedule a separate meeting to discuss the pros and cons of the potential alternative operations. Weston clarified that the alternatives are for the temporary condition, the main goal is still to return the unit to Kaplan operation. Kiefer added that not everyone believes returning the unit to Kaplan is the best plan.*

Project	**Task**	**Outage anticipated**	**Prior Prep Work**
Lower Granite	Rehab unit 1 to Kaplan	Sept 15, 2015 – Sept 14, 2016	Develop Plans and Specs, contract documents - Jan to Dec 2014, Contract award and pre-construction activities 2015; Bridge Crane Rehab to allow rehab Nov. 2013 - July 2015
Lower Monumental	Rehab Unit 1 to Kaplan & Cavitation Repair	February 2015 – February 2016	Bridge Crane Drive Repairs (April-May 2014)

3.1.2. [Nov 13] LWG unit 1. **ACTION:** NWW schedule a separate meeting to discuss the pros and cons of the potential alternative operations. Weston clarified that

the alternatives are for the temporary condition, the main goal is still to return the unit to Kaplan operation.

3.1.3. [Nov 13] **13BON89.** NWW Hydrofoil test in the B2CC. **ACTION:** Sands and Hockersmith will look at the options, update the MOC and send it back to FPOM. **Options are: Scrap the control and pull everything in early April; Pull the hydrofoils and leave the DIDSON until mid June; Push back the entire test until the summer of 2014.**

3.2. NWP Action Items.

3.2.1. [Nov 13] BON Unit 11 update to be added for December.

3.2.2. [Nov 13] BON Forebay elevation and FPP compliance. NOAA recommended: *When BON has PH1 priority and the Region is relying on the effective operation of the ITS, then the forebay should have a hard constraint at an elevation greater than 72.5'*. Bettin asked if the gates should be closed instead. Fredricks said he would prefer to spill than run PH1. **ACTION:** This will be included as a FPP change form and discussed more thoroughly.

3.2.3. JDA BLH Turbine Hub Upgrade Kit. Fredricks found a solicitation for JDA to repair the BLH turbine upgrades. Bettin said JDA has just one set of spare parts so they are trying to get more spare parts to have on hand. **ACTION:** Zyndol will come back in December with a full update. ***STATUS:*** *This is part of the Kaplan Linkage Repair program we have been working on for a few years. George Medina is PM. All these parts are internal to the hub and should not change the shape or performance of the turbine. We need to understand the turbine rehab program and potential impacts on fish. The hub rebuild kits will be used to return some fixed bladed units back to variable pitch (Kaplan) operation. MU5 is the first on the list that should start sometime beginning next FY. MU5 currently has blocked blades which are a concern to FPOM. Other units could be slated for additional hub kits if the pin inspections show that other units need to pro actively replace blade pins due to cracking.*

3.2.4. [Nov 13] TDA ITS FPP change form. **ACTION:** NWP will submit a change form regarding the TDA ITS operation. ***STATUS: completed on 2 December.***

3.2.5. [Nov 13] BON AFF PIT tag detector installation by CRITFC. **ACTION:** CRITFC and NWP PM-E will work to answer FPOM's questions about drawings, hydraulic conditions, and including the data in the PTAGIS database.

3.2.6. [Nov 13] TDA ITS gate configuration. Cordie said Fenton Khan suggested opening two over Unit 8 and just one over Unit 18. **FPOM says go with Fenton's recommendation. ACTION:** Cordie will put together a FPP change form for that change. Fenton will add some justification to the form as well. ***STATUS: completed on 2 December.***

3.2.7. [Nov 13] TDA split flow tests. **ACTION:** Mackey will coordinate a meeting in January to talk about spill tests at TDA.

3.2.8. [Nov 13] 13JDA04 JDA-S two-week extension. *Pending*. Zyndol presented the MOC. He did not find any experimental proof that additional flow is needed. Fredricks said all of the studies were conducted with JDA-S in operation. Cordie asked if north units could be operated to help push fish northwards. **NOAA and CRITFC suggested 10K for 24 hours. ACTION:** Mackey and Zyndol will further coordinate the MOC and bring back to the December FPOM.

3.3. Action Items completed or to be discussed later in the agenda.

3.3.1. [Sep 13] Snake River temperatures. **ACTION:** Hevlin will ask Graves to talk to Idaho Power about minimizing releases for five days. ***STATUS: no update. No longer an issue.***

3.3.2. [Sep 13] 13BON51. **ACTION:** the action agencies will bring back an operation that offers as much protection for juveniles and adults that may be attracted to PH2 when operating the PH2 units. ***STATUS: no update. No longer an issue.***

3.3.3. [Feb 13] BON AFF PIT tag detector. **ACTION:** Fryer will have detailed drawings, an operating plan, and monitoring plan for FPOM review in November. ***STATUS: discussed later in the agenda.***

4. Updates

4.1. NWW Updates

4.1.1. LWG NSE-3 outage update. Was out for two hours on 9 October.

4.1.2. 13LGS11 PIT tag coordination – work completed on 21 October. Fish were manually sampled.

4.1.3. 13IHR11 Line 1 disconnect update.

4.1.4. MCN Power outage impacts related to passage operations MFR 13 MCN 17. The upgrade is expected to be in place within the next couple of years. **FPOM requested an update after winter maintenance season.** Setter said she doesn't expect fish dollars to be needed since this is part of a larger project.

4.1.5. MCN update on 13MCN18 November dive. MOC comments were due by 31 October. The dive will be to take measurements. This lamprey structure will be less intensive than the one installed at BON.

4.1.6. NWW winter maintenance – Adult Fish Ladder Schedule. Available on the FPOM site.

4.2. NWP Updates

4.2.1. BON Updated Dewatering Plans. Completed and will be posted to the FPOM site.

4.2.2. BON PH1 ITS status. Fredricks had expressed concerns about the condition of the ITS entrance gates during low forebay. This is especially a concern when we were prioritizing PH1 operation and relying on the ITS for downstream passage.

4.2.2.1. Forebay elevation and FPP compliance. NOAA recommended: *When BON has PH1 priority and the Region is relying on the effective operation of the ITS, then the forebay should have a hard constraint at an elevation greater than 72.5'*. Bettin asked if the gates should be closed instead. Fredricks said he would prefer to spill than run PH1. **ACTION:** This will be included as a FPP change form and discussed more thoroughly.

4.2.3. BON LED testing. Hausmann referred FPOM to the attachments sent out with the agenda. He said BON has some spare bulbs on hand; they could test them now if FPOM approves. **FPOM agreed that BON should put in the LEDs that are on hand. Unit 18 will be the test unit.**

4.2.4. JDA BLH Turbine Hub Upgrade Kit. Fredricks found a solicitation for JDA to repair the BLH turbine upgrades. Bettin said JDA has just one set of spare parts so they are trying to get more spare parts to have on hand. **ACTION:** Zyndol will come back in December with a full update. *Update: This is part of the Kaplan Linkage Repair program we have been working on for a few years. George Medina is PM. All these parts are internal to the hub and should not change the shape or performance of the turbine. We need to understand the turbine rehab program and potential impacts on fish. The hub rebuild kits will be used to return some fixed bladed units back to variable pitch (Kaplan) operation. MU5 is the first on the list that should start sometime beginning next FY. MU5 currently has blocked blades which are a*

concern to FPOM. Other units could be slated for additional hub kits if the pin inspections show that other units need to pro actively replace blade pins due to cracking.

4.2.5. NWP winter maintenance schedules are posted to the FPOM site.

4.3. Research/FFDRWG updates. Approval letters, permits, etc located at www.nwd-wc.usace.army.mil/tmt/documents/FPOM/2010/NWP%20Research/Research.html

4.3.1. Rerecich says there is nothing for Ops coordination yet.

4.4. RCC update. Wright wins the award for using "Mayhem" first in the FPOM meeting.

Project	Previous day average (kcfs)	5 day forecast average (kcfs)	10 day forecast average (kcfs)
LWG	20	19	30
MCN	108	100	122
BON	122	118	135

4.5. Lamprey updates. Zorich reported the lamprey run is done. Final counts will be delayed. The day and night counts are usually adjusted by adding the LPS counts. In 2013 it was discovered the mechanical counters were not working as planned.

4.6. Avian. Task group meeting on 20 November at JDA.

4.7. Critical Infrastructure. No further progress on the standardization of tracking spare parts.

4.8. BPA updates. Bettin said there will be an update in January regarding the replacement of lines at JDA in 2014 and 2015.

5. **TDA ITS and Fifteenmile creek steelhead.** Faber explained ODFW has been monitoring Fifteenmile creek for a number of years. 2-3000 PIT tagged fish per year have been trapped and released into the creek since 2007. 2006 had a smaller number of PIT tagged fish. ODFW noted a loss at between Bonneville and the creek. In 2010 ODFW say 40% fewer fish going into the creek than those going over BON. In 2011 is was 50% and in 2012 it was 60%. Many of the fish that pass BON will also pass TDA (>80% in 2013) but then cannot find a good route back downstream from 15 December through 1 March due to the ITS being closed.

   5.1. Fredricks asked if there is a FPP change form addressing the ITS operation since the current operation expires in 2013. **NOAA recommends year round operation. BPA could not agree to that operation at the meeting.** Bettin asked what credit would be given. **ACTION:** NWP will submit a change form regarding the TDA ITS operation. Bettin had asked PSMFC if a PIT tag detector is feasible in the ITS. Warf will have a recommendation back to Bettin in a couple of weeks. If a detector could be put in, testing would follow.

6. **FFU Kelt monitoring plan.** Fredricks had some concerns between FFU and PSMFC. Martinson said he will talk with DeHart about SMP personnel reviewing the tapes on the weekends, when FFU isn't working. Klatte brought up the concerns regarding the trigger. BPA believes the video will increase the accuracy of the counts and therefore the trigger may need to be adjusted. Lorz and Fredricks quickly were fired up about the suggestion that the counting accuracy should somehow influence the trigger. **FFU will install the new monitoring equipment. The trigger discussion will occur on another day.** *Update: Martinson reported: At the November FPOM I was asked to look into taking on the task of reviewing the separator bar monitoring video on the weekends. I can report that my staff will be able to review the video on the weekends and report to the project biologist or control room operator should the trigger be reached.*

7. **AFF PIT tag detector.** J. Fryer provided a memo (located on the FPOM website). The new detector would not interfere with the existing PSMFC detectors. The plan would be to install it this winter. Fredricks asked if there is room between the return pipe and the ledge where the detector would be placed. **NOAA requested the data be added to the PTAGIS database and more detailed**

drawings. FPOM asked for a hydraulic analysis for how the detector will change flow. **ACTION:** CRITFC and NWP PM-E will work to answer FPOM's questions. Rerecich requested greater clearance between the top of the detector and the water elevation. FPOM did not want to see water going over the top of the detector at any time. J. Fryer recommended putting detectors on the overflow section of the weirs in the lower ladder. He doesn't want to fund it though. Zorich asked if the new detector would detect the half duplex tags (tags used in lamprey). Fryer said it could but the multi-plexor would need to be upgraded. The upgrade would cost about $2K. Mackey re-sent MOC 13BON85; it includes the results from the dead fish release by UI in the late summer/early fall.

8. **Zebra mussel control.** S. Wells provided a handout and passed around preserved zebra and quagga mussels. He discussed the recent research in the foul-release coatings. Wells explained he raised his test mussels and glued them to little leashes before allowing them the opportunity to attach to coated panels in the lab. Fredricks asked about salmon avoidance behavior studies. Wells said he hasn't been funded for those tests but he plans to conduct those tests if funded. He also noted there may be a need for juvenile lamprey testing. Fredricks suggested testing at BON first since TDA is the biggest bottleneck on the lower river; or maybe TDA-N. Cordie asked about the ability of the mussels to grow in FCRPS water. Wells said the mussels grew quite well in the Columbia River water and the Snake River water. He noted they also grew in the Willamette River water. Zyndol asked if the dewatering activities would kill off an infestation. Zyndol suggested steaming the fishway in the winter and letting the shells flush out. Wells suggested the shells wouldn't flush but rather provide a base for the next generation. Wells said the test panels are still in the water at the Port of Camas/Washougal. Wells said the permitting is a hurdle. Setter asked about the use by BOR or other agencies in the mid-west and east. Wells said BOR is concerned about drinking water and uses mainly zequanox, which is great for pipe applications.

9. **TDA ITS gate configuration.** Cordie brought to FPOM the original PNNL recommendation to operation three gates at Unit 1 and three over Unit 8. He asked why we went to three over Unit 1, one over Unit 8 and two over Unit 18. Klatte was the PM-E bio working on this issue at the time. He searched his aging brain and came up with the belief that TDA was doing some maintenance one year so FPOM went with Unit 18 with the belief that there wasn't much different in survival and guidance. He also produced his one and only scientific, peer-reviewed published paper. Cordie said Fenton Khan suggested opening two over Unit 8 and just one over Unit 18. **FPOM says go with Fenton's recommendation. ACTION:** Cordie will put together a FPP change form for that change. Fenton will add some justification to the form as well.

10. **TDA split flow test.** Lorz complimented Fredricks' write up. Fredricks said the results are not statistical, but he would be reluctant to say the spill didn't work to move fish to TDA-N. He said there needs to be more testing, similar to the 1995 FFU tests but more robust. Cordie asked about the capacity of the fishways. Cordie said he had seen documents suggesting the ladders were built for 100K fish per day. Fredricks and Lorz said that was looked at when determining the numbers of fish for splitting flows at BON. Mackey noted that those discussions occurred prior to her assignment as FPOM organizer so the historical record may be lost. Kudos to Fredricks for using "mayhem" more than once while discussing the impacts of **not** testing levels of spill in an effort to move fish from TDA-E to TDA-N during periods of high fish runs. Setter asked if it would be possible to increase the attraction flow from TDA-N. At this point the conversation was directed away from the potential Freedom Turbine and back to setting up a meeting in January 2014 to talk through testing spill volumes. **ACTION:** Mackey will coordinate a meeting in January to talk about spill tests at TDA.

11. **Coordination/Notification forms (need concurrence).**
    - **11.1. 13BON89 (updates 13BON05).** ***Not approved.*** NWW hydrofoil test in B2CC. Hockersmith explained the schedule changed. A contract was awarded in September.

NWW has been coordinating with BON to proceed with testing. Requests include opening the B2CC by 17 March, if the kelt trigger hasn't been met; an eight hour closure in April; an eight hour closure in May.

11.1.1. Fredricks expressed concerns about the potential impact to kelt passage and the juvenile spring migrants. He also expressed concern about the outages in April and May, especially the one in May. He asked why the schedule previously coordinated for 2013 couldn't be used for 2014. Fredricks is more comfortable testing the sub-yearling run (which generally doesn't use the B2CC in the summer) rather than killing ESA fish in the spring. Hockersmith said the problem with just delaying a whole year include modification to two contracts and equipment availability. Fredricks then commented on the "controls". He said the proposed controls are not controls. He would like to see a block design. Hockersmith said the block design would be difficult. Fredricks then asked about the need for the biological portion of the testing. Sands said testing at BON is really a worst case scenario; if it works at BON it should work at LWG (location of final installation).

11.1.2. Lorz asked why this prototype isn't going in at LWG. Hockersmith said four hydrofoils can span the entire B2CC as opposed to needing 16 for a RSW. There is also redundancy with the B2CC PIT tag detector. Fredricks said there is lower risk at BON, where only a portion of fish pass the B2CC as opposed to the bulk of the fish passing the LWG RSW. Lorz countered that testing early in the year would avoid that issue at LWG. He strongly suggested testing it where you plan to install it because this would not be needed at the B2CC. Sands said the support structure needed to suspend the hydrofoils at LWG would be more expensive and difficult.

11.1.3. FPOM recommends the April outage occur after spill starts. Lorz said to take all of the equipment out in April so the May outage isn't needed. Petersen said she will take the 17 March opening back to BPA. Hausmann noted there may be a need to take out Unit 12 to allow boat access to the log boom. **ACTION:** Sands and Hockersmith will look at the options, update the MOC and send it back to FPOM. **Options are:**

1. **Scrap the control and pull everything in early April.**
2. **Pull the hydrofoils and leave the DIDSON until mid June.**
3. **Push back the entire test until the summer of 2014.**

11.2. 13JDA04 JDA-S two-week extension. *Pending*. Zyndol presented the MOC. He did not find any experimental proof that additional flow is needed. Fredricks said all of the studies were conducted with JDA-S in operation. Cordie asked if north units could be operated to help push fish northwards. **NOAA and CRITFC suggested 10K for 24 hours. ACTION:** Mackey and Zyndol will further coordinate the MOC and bring back to the December FPOM.

11.3. 13LWG17 Juvenile Fish Collection Channel Upgrade. *Generally approved with some work still needed on the specific operation details.* Fielding would like concurrence to shut off the collection channel so he can proceed with the contract language. Bettin said BPA is generally agreeable to the proposed plan.

12. Fish Passage Plan: The Draft 2014 FPP and Change Forms website is at: http://www.nwd-wc.usace.army.mil/tmt/documents/fpp/2014/changes/index.html. All change forms reviewed to date have been posted. See the "*Production Schedule & Deadlines*" document for a timeline of events and due dates for change forms to be included the printed version of the 2014 FPP:

- Friday, 01 NOV 2013 – all Corps change forms due to Wright.
- Friday, 13 DEC 2013 – all change forms due to Wright.

- Tuesday, 31 DEC 2013 – final draft sections and change forms will be posted online for regional review.
- Appendix A (Special Project Operations and Studies) sections will be drafted by NWW and NWP as soon as final study designs and operations are finalized (via FFDRWG and/or FPOM), and are due to Wright by mid-February for inclusion in the final print version of the 2014 FPP.

13. Potential 2014 FPP changes.

13.1. Fredricks suggested including a calendar of dates when specific actions are scheduled to occur.

13.2. **MCN**: Debris spill protocol prior to TSW removal. Proposed at FPOM June 13.

13.3. **MCN**: remove language regarding transportation.

13.4. **MCN:** sawtooth model methodology.

13.5. **LGS TSW**: add criteria that SW will be closed no earlier than August 1 to ensure closure doesn't occur during subyearling migration. If low-flow criteria are achieved prior to August 1, the TSW will remain in service until August 1 unless an adult passage delay is observed or if necessary due to turbine unit operational constraints at low flows. Closing the TSW prior to August 1 will be coordinated with FPOM via an MOC.

13.6. **LGS Unit 1 low flow**: language to help clarify Unit 1 operation to help push out the back eddy.

13.7. **Appendix B:** remove language regarding MCN transport.

13.8. Lorz asked about the navlock operation at MCN. He wanted to know if the downstream gates are kept closed until needed. There is an idea that the navlock may be the route some sockeye pass without going through the count window. Provide update that gate is stored closed. *This is an update for Tom Lorz's inquiry for MCN navigation lock operation. McNary operators normally leave the navigation lock in the configuration last used. If a towboat and its tow exited the lock upstream-bound, the lock is left full with the downstream lift gate closed. If the last vessel left the lock downstream bound, then the lock is left empty with the downstream gate closed for security reasons. This is not always preferred configuration as the wind can cause the lift gate to rattle in its guide slots. In windy conditions, the lock is filled after a downstream lockage to prevent lift gate rattling. That said, McNary operators will change lock configuration ahead of time to facilitate an upcoming lockage if notified by an approaching vessel at least 30 minutes prior to arrival. This practice reduces transit time through the McNary Navigation Lock.*

14. Task Group Updates.

14.1. Avian task group. Chaired by NWW. Team members include: Cordie, Dugger, Fone, Fredricks, Hausmann, Madson, Setter, Skidmore, Trachtenbarg, Zorich, and Zyndol. **Next meeting is 20 November at JDA.**

14.2. Sea Lion task group. (Stansell). Team members include: Conder, Cordie, Fredricks, Hausmann, Mackey, J. Skidmore, Whiteaker, VanderLeeuw. The task group met at CRITFC on 18 September.

14.3. AFF mods (Rerecich). Team members include: Benner, Fredricks, Lorz, Mackey, Meyer, Rerecich, Stephenson, and Whiteaker. Team met on 20 August. Rerecich reported the release pipes will be reconnected. Fredricks said he would like to take a look at the head over the exit ladder weirs to make sure there is a streaming flow over them. Valve 15 raking will be looked at as well. Appendix G will be modified to reflect the recommended raking level and the recommended water elevation.

15. Other.

Moody's new shoes.

Bern's birthday cake. (Thank you Doug and Lisa)

16. Calendar items/ next FPOM agenda items. (Check the CY13 on the website)

OFFICIAL COORDINATION REQUEST FOR
NON-ROUTINE OPERATIONS AND MAINTENANCE

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COORDINATION TITLE: 13BON B2CC hydrofoil PIT detector test
COORDINATION DATE-14 November 2013
PROJECT- Bonneville Dam
RESPONSE DATE- 14 November 2013 (FPOM)
Description of the problem: The corner collector at the 2nd Powerhouse of Bonneville Dam (B2CC) is an ideal location to field test the proof of concept for a full size hydrofoil PIT-tag system due to existing infrastructure, ease of installation, and cost savings. The B2CC provides existing PIT-tag detection that would enable assessment of the PIT-tag detection efficiency of a hydrofoil PIT-tag detection system. Other surface passage facilities in the Federal Columbia River Power System (FCRPS) lack PIT-tag detection that could be used to assess the detection efficiency of a hydrofoil PIT-tag detection system. Furthermore, the entrance width of the B2CC is 15 feet wide and the entrance to other surface passage structures is 50 feet wide. A smaller width surface passage test environment simplifies the approach and reduces the cost of evaluating the proof of concept prototype. A system that provides coverage for the B2CC would only require 4 hydrofoil antennas where as a system for other surface passage structures such as a Removable Spillway Weir (RSW) would require 18 hydrofoil antennas to provide a similar level of coverage because the width of the entrance is larger. Significant cost savings would result from developing and testing the hydrofoil PIT-tag system concept at B2CC compared to other surface passage structures. If the prototype performs well, the concept may be used to develop PIT-tag detection for a variety of surface passage structures.

The original FPOM request was discussed during the 14 March 2013 meeting for an evaluation during the summer 2013. FPOM concluded the test may go forward as coordinated and the next step was to get approval from Bonneville Project. Sands submitted an access request to the Bonneville project and permission was granted 1 May 2013. Award of a contract was delayed until September 17, 2013 resulting in a need to shift the evaluation schedule. The study comprises a feasibility and compatibility phase followed by an in-water evaluation. The feasibility and compatibility evaluations would include a series of tests at Bonneville Dam and in the laboratory during the fall 2013. These tests would evaluate the hydrofoil concept system feasibility and compatibility with the existing B2CC system in the air and do not include in-water work. The follow up in-water evaluation would be from February to early May 2014.

This MOC is a follow-up request due to changes in the timing of outages.

Type of change in operations required: Four periods of change in operation of the B2CC are requested, short periods of B2CC operation in early February 2014, begin operation of B2CC by 0800 on March 17, 2014 if not already operating, and two outages of up to 8-hours each on April 8, 2014 and May 13, 2014 (Table 1). The project schedule is summarized in Table 2.

Table 1. Tentative changes in the operation of the B2CC in the Fish Passage Plan required for the evaluation.

Approximate Dates	Operational Change	Activity
~Feb. 3-14	Periodic operation	Installation, counter weight adjustment and orientation of the hydrofoil antennas.
March 17, 2014 0800	Open B2CC	Begin continuous operation of B2CC if not already operating.
early April (~April 8, 2014)	Up to an 8-hour outage	Remove hydrofoil PIT-tag antennas.
early May (~May 13, 2014)	Up to an 8-hour outage	Remove monitoring equipment (DIDSON camera and equipment barge).

Table 2. Tentative project schedule.

Dates	Activity
September 17, 2013	Contract awarded.
October 16, 2013	Pre-work coordination meeting.
October 28-31, 2013	Feasibility test to assess compatibility and/or interference issues between an unshielded hydrofoil concept system and existing B2CC PIT-tag detection system.
February 2014	Install prototype forebay PIT-tag antennas and monitoring equipment (DIDSON cameras and equipment barge).
Begin between March 1 and March 17 and continue through April 7, 2014	Evaluate the B2CC passage distribution with the prototype forebay PIT-tag detection system installed and B2CC operating (treatment test condition). Evaluate the physical performance of the prototype forebay PIT-tag detection system.
April 3-7, 2014	Test debris response of hydrofoil antennas.
April 8, 2014	Remove prototype forebay PIT-tag detection system.
April 9-May12, 2014	Evaluate the B2CC passage distribution without the prototype forebay PIT-tag detection system installed (control test condition).
May13, 2014	Remove monitoring equipment (DIDSON cameras and equipment barge).

We request intermittent operation of the B2CC to facilitate adjustment and orientation of the hydrofoil antennas during installation during early February 2014. B2CC would need to be opened and closed several times a day over approximately a 5 day period to determine the amount of counter weight and orientation of each hydrofoil as they are sequentially installed.

The draft Fish Passage Plan calls for the B2CC to operate during spill season and this is dependent on meeting a target of kelts at the JMF adult/debris separator with the count beginning on March 01. The tentative target is 2 kelts per day are observed at the JMF separators for 2 consecutive days for a cumulative total of 20 kelts which begins operation of the B2CC for the fish passage season. For the period of 2009 to 2013 the B2CC was opened between March 1 and April 13 and the kelts target was reached between March 14 and April 13 (Table 3). We request that if the kelts target has not been reached by 0800 on March 17, 2014 the B2CC would become operational on March 17, 2014 at 0800.

Table 3. Date of initial operation of B2CC and date kelts target was reached, 2009-2013.

Year	B2CC Opened	Reached kelts target	Notes
2013	1-Mar	22-Mar	Closed 3/13 and reopened 3/22
2012	19-Mar	19-Mar	
2011	14-Mar	14-Mar	
2010	17-Mar	25-Mar	Closed 3/23 and reopened 3/25
2009	13-Apr	13-Apr	

Closure of the B2CC would be required for removal of the hydrofoil PIT-tag antennas in early April (approximately April 8, 2014) and a second outage in early May (approximately May 13, 2014) to remove monitoring equipment (DIDSON cameras and an equipment barge) (Figure 1). It is expected that each of the outages would require no more than 8-hours to complete.

Impact on facility operation: The installation of monitoring equipment and open and closure of the B2CC will require operational support from the project. Project crane assistance for the installation and removal of monitoring equipment and the prototype forebay PIT-tag detection system will be coordinated with the project. Access to the intake area of the B2CC will be needed by the contractor on a regular basis between October 2013 and May 2014. Access to the BRZ in the vicinity of the B2CC will be needed for monitoring equipment installation and testing. Outages to the B2CC will be required to safely remove equipment. Table 2 is a tentative schedule for major study activities study.

Length of time for repairs: N/A

Expected impacts on fish passage: Installation of equipment will occur prior to the fish passage season and should not affect fish passage. Removal of equipment will occur during the fish passage season.

B2CC outages to remove equipment will temporarily increase the number of fish passing through turbines and the juvenile bypass system and may affect smolt survival. Potential impact to migrating yearling Chinook salmon, coho salmon, sockeye salmon and steelhead smolts and steelhead kelt have been estimated (See Tables 3-8).

The intermittent operation of the B2CC for orientation adjustment of the hydrofoil antennas during installation in early February is not anticipated to negatively impact smolt passage.

The potential operation of the B2CC prior to reaching the kelt target in the FPP is not anticipated to negatively impact smolt passage.

There is no anticipated impact to other studies at Bonneville Dam from February to May 2014. In the event that other studies are conducted at B2CC from February to May 2014 activities will be coordinated to minimize impacts.

Affects of B2CC 8-hour outages in early April and early May:

Smolt Passage

Each outage would be up to 8 hours but may be less than 8 hours. B2CC outages would be on April 8 and May 13. The overall impact to ESA listed smolts was estimated by applying the passage proportions and survival estimates from the Compass Model to the range and average daily smolt passage index (from Fish Passage Center) estimated during the previous 5 years (2009 to 2013). The outage impact to ESA listed smolts was estimated using the NOAA Fisheries 2012 “Estimation of Percentages for Listed Pacific

Salmon and Steelhead Smolts Arriving at Various Locations in the Columbia River Basin". Assumptions used for assessing the impact to smolts included: 1) passage distribution is similar across the day, 2) each 8-hour outage represents 1/3 of the daily passage numbers, 3) the B2CC outage would affect passage distribution only for the 2nd powerhouse, 4) Compass Model passage distribution and survival for Coho and sockeye salmon were assumed to be the same as yearling Chinook salmon. Compass Model estimates and calculated assumptions are presented in Table 4. Numbers of affected smolts and additional mortality (overall and ESA listed fish) for each 8-hour closures of the B2CC are presented in Tables 5 and 6, and overall in Table 7.

Table 4. Assumptions by species used to estimate the impact of closing the B2CC on smolts. The B2CC outage is anticipated to affect passage distribution for the 2nd powerhouse only.

	subyearling Chinook	Yearling Chinook	Coho	Sockeye	Steelhead
B2CC survival	99.0%	100.0%	100.0%	100.0%	100.0%
B2 Turbine survival	86.0%	94.8%	94.8%	94.8%	87.9%
JBS survival	95.5%	98.0%	98.0%	98.0%	95.4%
B2CC Operating					
B2CC passage	44.4%	32.5%	32.5%	32.5%	70.7%
B2 Turbine passage	41.7%	43.8%	43.8%	43.8%	15.0%
JBS passage	13.9%	23.7%	23.7%	23.7%	14.3%
B2 survival	93.1%	97.3%	97.3%	97.3%	97.6%
B2CC Closed					
B2 Turbine passage	75.0%	65.0%	65.0%	65.0%	17.0%
JBS passage	25.0%	35.0%	35.0%	35.0%	83.0%
B2 survival	88.4%	95.9%	95.9%	95.9%	94.1%
Change in B2 survival	-4.7%	-1.3%	-1.3%	-1.3%	-3.4%
% ESA listed	37.7%	15.5%	1.5%	0.9%	72.4%
Change in ESA listed survival	-1.8%	-0.2%	0.0%	0.0%	-2.5%

Table 5. Estimated Bonneville Dam smolt passage and additional mortality resulting from closing the B2CC for 8-hours on April 8 (passage was for the 5-year period 2009-2013).

	subyearling Chinook	Yearling Chinook	Coho	Sockeye	Steelhead
Dam passage (2009-2013)	359 to 3,375	297 to 1,525	96 to 8,059	0 to 93	109 to 590
B2CC passage in 24h	80 to 756	56 to 285	18 to 1,507	0 to 17	46 to 248
B2CC passage in 8h (affected)	27 to 252	19 to 95	6 to 502	0 to 6	15 to 83
Estimated additional mortality	1 to 12	0 to 1	0 to 7	0	1 to 3
Estimated additional mortality (ESA listed)	0 to 4	0	0	0	0 to 2

Table 6. Estimated Bonneville Dam smolt passage and additional mortality resulting from closing the B2CC for 8-hours on May 13 (passage was for the 5-year period 2009-2013).

	subyearling Chinook	Yearling Chinook	Coho	Sockeye	Steelhead
Dam passage (2009-2013)	403 to 427,190	47,858 to 152,162	8,688 to 22,778	1,474 to 55,150	5,636 to 36,960
B2CC passage in 24h	90 to 95,691	8,949 to 28,454	1,625 to 4,259	276 to 10,313	2,367 to 15,523
B2CC passage in 8 hours (affected)	30 to 31,897	2,983 to 9,485	542 to 1,420	92 to 3,438	789 to 5,174
Estimated additional mortality	1 to 1,505	40 to 126	7 to 19	1 to 46	27 to 178
Estimated additional mortality (ESA listed)	1 to 567	6 to 20	0	0	20 to 129

Table 7. Overall estimate of number of smolts affected and additional smolt mortality resulting from closing the B2CC for up to 8-hours each day on April 8 and May 13.

	subyearling Chinook	Yearling Chinook	Coho	Sockeye	Steelhead
B2CC passage in 8 hours (affected)	57 to 32,149	3,002 to 9,580	548 to 1,922	92 to 3,443	804 to 5,257
Estimated additional mortality	3 to 1,517	40 to 127	7 to 25	1 to 46	28 to 181
Estimated additional mortality (ESA listed)	1 to 572	6 to 20	0	0	20 to 131

Kelts and Adult Salmon Passage

Each outage would be up to 8 hours but may be less than 8 hours. B2CC outages would be on April 8 and May 13. The overall impact to steelhead kelts and adults was estimated by applying the passage distribution and survival estimates from the report titled *Route-Specific Passage and Survival of Steelhead Kelts at the Dalles and Bonneville Dams, 2012* by Rayamajhi et al. 2013. The numbers of kelts and adults that may be affected by the proposed 8 hour B2CC outages on April 8 and May 13 was estimated from the monthly counts of kelts and adults observed on the Bonneville Powerhouse separator during the previous 5 years (2008 to 2012; Rick Martinson, PSMFC, personal communication). Approximately 75% of the adults that cross the separator are observed (Rick Martinson, PSMFC, personal communication), so the monthly counts were adjusted up for approximately 25% that are not observed. Daily passage numbers were not available so daily passage numbers were estimated as the daily portion of the monthly total count. Assumptions used for assessing the impact to kelts and adults included: 1) passage distribution is similar across the day (Weiland et al. 2009 did not observe a diel passage pattern), 2) each 8-hour outage represents 1/3 of the daily passage numbers, 3) the B2CC outage would affect passage distribution only for the 2nd powerhouse, 4) passage distribution and survival was assumed similar for kelts and adults salmon. Passage and survival estimates and calculated assumptions are presented in Table 8. Numbers of affected kelts and adults and additional mortality for an 8-hour closure of the B2CC on April 8, May 13 and overall are presented in Table 9.

Table 8. Assumptions used to estimate the impact of closing the B2CC on steelhead kelt or adult salmon. The B2CC outage is anticipated to affect passage distribution for the 2nd powerhouse only.

	Steelhead kelt and adult salmon
B2CC survival	95.0%
B2 Turbine survival	60.0%
JBS survival	60.0%
B2CC Operating	
B2CC passage	74.4%
B2 Turbine passage	12.8%
JBS passage	12.8%
B2 survival	86.0%
B2CC Closed	
B2 Turbine passage	50.0%
JBS passage	50.0%
B2 survival	77.4%
Change in B2 survival	-8.6%

Table 9. Estimated numbers of steelhead kelts and adult salmon that may be affected and additional mortality resulting from closing the B2CC for 8-hours on April 8, May 13, and overall (passage numbers are estimated from 2008-2012).

	April 8		May 13		Total	
	Kelts	Adults	Kelts	Adults	Kelts	Adults
Estimated B2CC passage 24h	0 to 1	4 to 41	0 to 2	4 to 176	0 to 3	8 to 217
Estimated B2CC passage 8h (affected)	0	1 to 14	0 to 1	1 to 59	0 to 1	1 to 73
Estimated additional mortality	0	0 to 1	0	0 to 5	0	0 to 6

Comments from agencies:
14 March 2013 FPOM- 13BON05 B2CC hydrofoil PIT detector test. (Attached). Laughery provided a .ppt presentation. Installation will require the B2CC be closed for two days. Laughery is looking at an ERDC trip in April to look at the TSW model. Sands submitted a request for access request letter to BON. NWW is waiting on approval from BON before going forward with the contracting to start fabrication and installation. Fredricks said there is the coordination that is occurring today and then further coordination regarding details about timing and deployment. Hausmann said the BON concerns are primarily debris and the impact to the slot filler. Currently there is not a good way to free debris since it is very rare that anything gets hung up at the B2CC. CRITFC is ok with the installation as long as it doesn't significantly impact B2CC operations. Hevlin thanks Fredricks for working out the bugs on this project in NWP rather than at LWG. Fredricks said he figured it would impact less fish at the B2CC than at a TSW at LWG. Fredricks also noted that this test is scheduled for a time when sub-yearlings pass and sub-yearlings do not use the B2CC as much as the spring fish. There will not be any additional fish tagged to pass through this system. FPOM is in agreement with moving this test forward

Final results:

Figure 1. Equipment barge for monitoring B2CC passage using DIDSON cameras. Photos are from a study conducted in 2008.

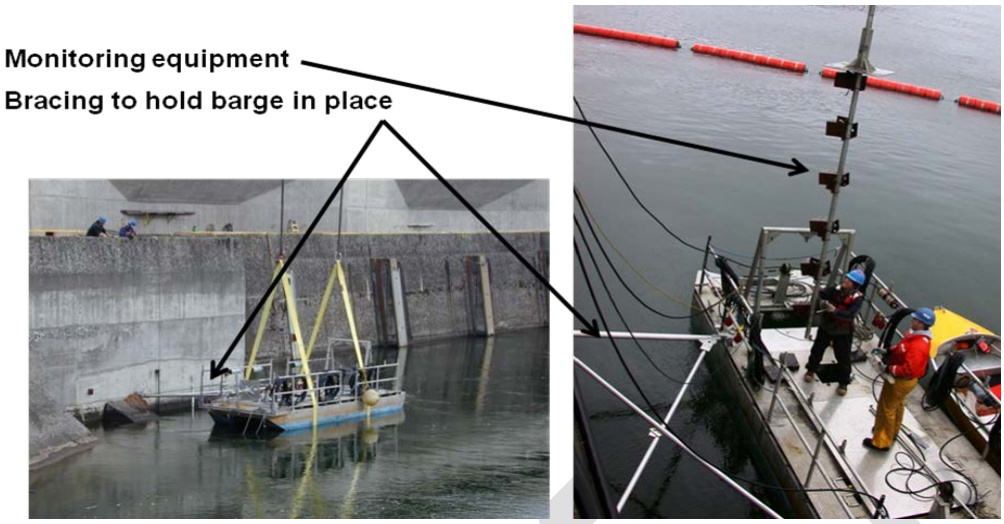
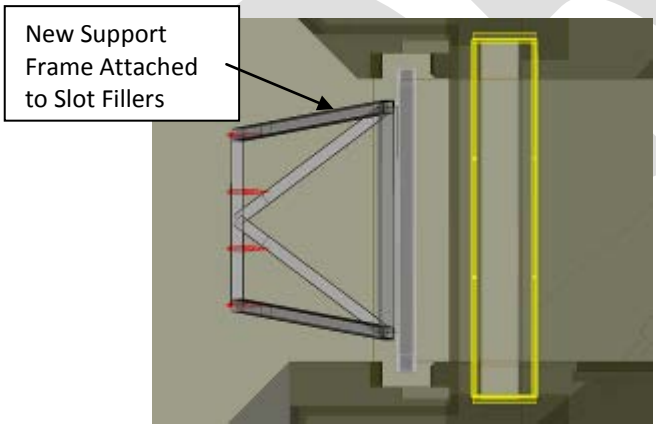
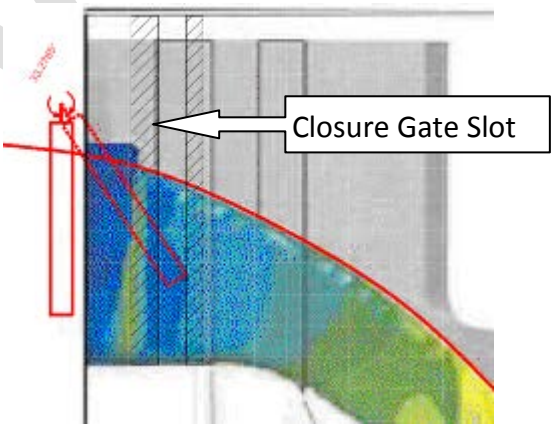


Figure 2. Plan view of hydrofoils and frame mounted to B2CC slot filler.

Figure 3. Section view of hydrofoils rotated to B2CC closure gate.





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COORDINATION TITLE- 13JDA04 *John Day Dam South Adult Fishway's extended outage for Joint and Waterstop Repair*
COORDINATION DATE- 8/13/13
PROJECT- John Day Dam, *Natalie Richards, District PM & Miro Zyndol, JD POC*

RESPONSE DATE- October 2013 FPOM
Description of the problem- Failed waterstops in several parts of the JDA have resulted in the water leaking into galleries and onto electrical equipment, creating a safety hazard. A critical part of this large repair contract is the JDA-S Fishway AWS conduit, leaking into the PH Strainer Gallery (floor 1)

The repair is attaching a rubber seal to the concrete with stainless steel plate and stainless steel expansion anchors. There will also be an odorless elastomeric sealant placed under the rubber seal to insure a good watertight seal.

Type of outage required- JDA-S Fishway is required to be OOS and the AWS conduit must be dewatered/ dry to facilitate access to all repair/work areas along the length of JD Powerhouse.

The repair is attaching a rubber seal to the concrete with stainless steel plate and stainless steel expansion anchors. There will also be an odorless elastomeric sealant placed under the rubber seal to insure a good watertight seal.

Impact on facility operation – The FPP has 1 March as the start date for all fishways. JDA-S Fishway will be OOS through 8 March 2014. JDA will return the fishway to normal operation no later than 15 March.

Since the repair is attaching a rubber seal to the concrete with stainless steel plate and stainless steel expansion anchors and using an odorless elastomeric sealant, there is no need for flushing the fishway prior to returning to service.

Dates of impacts/repairs- Mid-January 2014 through 15 March 2014.

Length of time for repairs- About two months, from mid January through 8 March. JDA-S Fishway will return to regular service the week of 10 March, with everything in FPP criteria no later than 15 March 2014.

Expected impacts on fish passage-
Bull Trout- This action is expected to have minimal impacts to Bull Trout.
Occurrence in Action Area. Of the five distinct population segments (DPS) of bull trout listed as threatened by the USFWS, the Columbia River DPS is the only one that is likely to occur in the vicinity of the proposed project. Historically, bull trout of the Columbia River DPS likely ranged through much of the Columbia River Basin with spawning and rearing occurring in the coldest creeks, often at higher elevations. Presently, bull trout of the Columbia River DPS are distributed in a more fragmented pattern throughout the Columbia River Basin with fewer adult migratory fish and fewer, more compressed spawning reaches than historically occurred.

WDFW and Corps personnel provided a list of anecdotal sightings/captures of bull trout in the mainstem Columbia River. From 2000 through 2012 there were eleven bull trout reported. Three were downstream of Bonneville Dam, with two at the mouth of Hamilton Creek (RM 143) and one in 2005 at the Bonneville Dam Smolt Monitoring Facility (RM 144). Upstream of the dam, one bull trout was found at Cascade Locks (RM 149), two at Drano Lake (RM 162), two at the mouth of the Klickatat River (RM 180.5), one in 2002 at the John Day Dam Smolt Monitoring Facility (RM 215), and one sighting at Dog Creek Falls by a reputable WDFW creel sampler who observed 18- to 24-inch cuts or dollies working old redds below the splash pool over the course of two weeks.

Lamprey- no expected impacts due to timing of the outage does not coincide with historical timing of adult lamprey passage.

Downstream migrants- The outage is for the adult fishway, the juvenile bypass system will operate within FPP criteria.

Upstream migrating salmonids- Minimal impact expected for Chinook, due to their timing doesn't typically coincide with the proposed extended outage. There are impacts expected for steelhead. The majority of steelhead tend to pass JDA-S during March. These fish may be delayed as they seek the JDA-N entrance. Providing attraction flow may help alleviate these impacts, however, looking at October passage for steelhead, by ladder, for the years 2008-2012, 1.5K of attraction flow normally provided by Bay 2 may not be enough to pull the majority of the fish to JDA-N.

Table 1. JDA Steelhead passage, by ladder, from 1-31 October 2008-2012.

	2012	2011	2010	2009	2008
JDA-S	21888	27681	29456	70752	27153
JDA-N	6005	7796	11284	29428	8385
% JDA-N	22%	22%	28%	29%	24%

Table 2. JDA Steelhead and Chinook passage from 4-31 March for years 2003-2007.

Note- fish passage numbers available for March from 2003 - 2007

Date	2003	2004	2005	2006	2007
4-10 March					
JDA-S CH	2	0	0	0	0
JDA-S STHD	2168	308	480	0	418
JDA-N CH	6	0	0	0	0
JDA-N STHD	1008	84	179	163	306
11-17 March					
JDA-S CH	52	2	0	0	0
JDA-S STHD	1321	695	324	2	423
JDA-N CH	241	0	1	0	1
JDA-N STHD	1731	184	483	79	283

Comments from agencies

12 September 2013- FPOM asked if there are residues that need to be washed out prior to watering up the fishway.

JDA Tech Staff- -----Original Message-----
From: Hunter, Patrick J NWP
Sent: Thursday, September 12, 2013 10:12 PM
To: Mackey, Tammy M NWP; Richards, Natalie A NWP

NWP; Zyndol, Miroslaw A NWP
Subject: RE: 13JDA04 JDA-S extended outage (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE
We should check with the designers but I saw they were using a product that met standards for drinking water and the same standards we use for grouts to repair the leaking joints in the fish ladders.
Patrick J. Hunter, P.E.

CENWP-EC-DS-
-----Original Message-----
From: Hace, Kevin J NWP
Sent: Tuesday, September 17, 2013 10:06 AM
To: Richards, Natalie A NWP; Zyndol, Miroslaw A NWP
Subject: Grout (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

For repairs in the fishway and in the AWS conduit, there is no grout that will be placed.
The repair is attaching a rubber seal to the concrete with stainless steel plate and stainless steel expansion anchors.
The detail also calls for an odorless elastomeric sealant to be placed under the rubber seal to insure a good watertight seal.

No grout is called out in this repair.
Kevin

NOAA Fisheries-
-----Original Message-----
From: Gary Fredricks - NOAA Federal [mailto:gary.fredricks@noaa.gov]
Sent: Tuesday, September 17, 2013 2:14 PM
To: Mackey, Tammy M NWP
Cc: Trevor Conder - NOAA Federal; Kiefer,Russell; Lorz, Tom
Subject: [EXTERNAL] Re: FPOM: 13JDA04 JDA-S two week extended outage (UNCLASSIFIED)

Tammy, I see the response on the "odorless" sealant but I have to wonder if this is odorless to humans (relatively poor sense of smell) or salmon that have an extremely fine tuned sense of smell. In any case, I think this work poses a significant risk to overwintering steelhead that are moving towards their spawning areas at this time of the year. We seem to be experiencing another rather poor run this year, particularly the later, largely "B" run fish and we don't need additional passage effects that might make things worse. To help alleviate delay, I would recommend sufficient attraction spill for the north ladder during the days in March when the south ladder is out of service. Thanks, Gary

JDA Fisheries-----Original Message-----
From: Zyndol, Miroslaw A NWP
Sent: Tuesday, September 24, 2013 3:44 PM
To: Mackey, Tammy M NWP; Richards, Natalie A NWP; Hace, Kevin J NWP; Green, Allen

NWP; Hunter, Patrick J NWP
Cc: Grosvenor, Eric NWP; Klatte, Bernard A NWP; Wertheimer, Robert H NWP; Tackley, Sean C NWP; Stansell, Robert J NWP
Subject: RE: 13JDA04 JDA-S extended outage in March 2014 (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

I am only aware of a study for "no attraction spill versus 1.5 K" by FFU, which resulted in the current JD requirement; there isn't any experimental evidence that an additional flow would attract more fish to JD North entrance.

Also, the available fish passage data seem to indicate a different passage preference by various species of adult salmonids. For example, fall chinook prefer JD South over JD North at 3:1 ration, while fall steelhead are close to the ideal 1:1 distribution.

In summary, the only proven attraction spill for bringing more adult salmonids to the JD North entrance is 1.5K.
Thanks !
MZ
PM-E. -----Original Message-----
From: Langeslay, Mike J NWP
Sent: Tuesday, November 05, 2013 3:04 PM
Subject: RE: FPOM: Official Coordination- 13JDA04 JDA-S extended outage (UNCLASSIFIED)
Classification: UNCLASSIFIED
Caveats: NONE
Tammy, probably the most current source of empirical data for this is the U of I telemetry study we did in the fall of 1997. I pasted the conclusions below but it might get jumbled. In case you didn't already have this, the report is attached. There may be some older reports that apply, but we did this study specifically to address this issue.

"We found little evidence that spill at levels used during the 1997 study significantly improved passage for steelhead at John Day Dam. There were no significant differences in use of the NSE nor were there significant differences in median passage times for steelhead that first approached and first entered NSE and passed the dam using the north-shore ladder with and without spill. The proportion of steelhead that first approached and first entered NSE, and that eventually passed the dam using the north-shore ladder was consistently higher during spill periods than during periods without spill, but differences were not statistically significant. Nearly half the steelhead first entered the tailrace at John Day Dam along the north shore, but only 16-17 % first approached the dam at the north-shore fishway. Spill levels during this study were about 1% of river flow, with the remaining flow passing through the powerhouse near the southern shore. The level of spill used during this study was insufficient to counter the attractive flow coming from the powerhouse. Columbia River flows were also above average in 1997. Effects of spill during summer and early fall on passage of steelhead at John Day Dam during low flow years may vary from that observed during this study."

Final results
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COORDINATION TITLE- 13LWG17 Lower Granite Juvenile Fish Collection Channel Upgrades
COORDINATION DATE- initially September 10, 2013;recoordinate November 14, 2013
PROJECT- Lower Granite
RESPONSE DATE- November 14 FPOM meeting
Description of the problem- Construction activities associated with the Lower Granite fish bypass system upgrade will require extensive onsite efforts over an approximate 36 to 86 month construction schedule. While many of the construction activities can occur during normal project operations, some activities may require alteration of normal project operations. The time necessary for completion of construction activities will be directly correlated with the construction methods employed. The existing collection channel within the powerhouse will require extensive concrete mining to expand the channel from 6 ft. to 9.5 ft. and the potential replacement of 10" orifices with 14"orifices. The construction method for concrete mining has yet to be determined but the USACE is approximating 6-10 months to complete the task which likely translates into three un-watered work windows (15 December to 24 March). On the other end of the spectrum for construction schedules, a single un-watered work window of 1 August to 24 March is anticipated to allow for construction activities without interruption and benefit the collection mining process. All potentially anticipated construction scenarios have various pros and cons on project operations, fish passage, and overall project costs.

The USACE's Fish Passage Plan (2013) calls for the collection channel to be operated from 25 March to 31 October for juvenile passage and collection and 1 November to 15 December for adult fallback passage. Spill operations typically begin 3 April and end 31 August. The proposed extended un-watered work window would alter the normal operations of the collection channel and as a result limit the available passage routes to the spillway and turbines during the month of August. Available passage route for September to December would be via the turbines. The Corps proposes that the RSW operate from 1 September to 15 December to allow alternate passage routes for juvenile and adult salmonids. The RSW would operate under the following scenario:

1. Operate the RSW 12 hours per day (6am to 6pm) from 1 September to 15 December.

Operating the RSW during the extended un-watered work window would require discharge through the RSW of 6.8 kcfs. During low to average river flow years, minimum generation requirements through the turbines may result in a lack of water to operate the RSW and maintain minimum operating pool. In that case, the RSW would need to be closed and flows would be routed through the turbines while maintain minimum operating pool levels.

Table 1. – Average inflows and turbine discharge at Lower Granite Dam, 2006 to 2012. Inflow and powerhouse discharge are reported as kcfs.

Month	Inflow (kcfs)	Powerhouse (kcfs)
August	31.05	13.20
September	24.77	23.95
October	21.07	20.60
November	21.73	20.70
December	24.03	23.65

Type of outage required- The removal of ESBS's and the closure of the collection channel from 1 August 2015 to 24 March 2016. Open the RSW for fish passage from 1 September to 15 December.
Impact on facility operation- The impact to facility is the early closure of the collection channel and the de-watering of the Juvenile Fish Facility in August 2015 instead of normal December closure.
Dates of impacts/repairs- 1 August 2015 to 24 March 2016
Length of time for repairs- The construction of the Juvenile Bypass System is anticipated to begin in the fall of 2014 with completion in the spring of 2016. The extended un-watered work window is expected to occur from 1 August 2015 to 24 March 2016.
Expected impacts on fish passage- The closure of the collection channel may impact juvenile salmonids passage and transportation (Table 2) and adult fallbacks (Table 3) and require their passage through the spillway, RSW or turbines. Fish that are entrained in the gatewells will need to be dipped out and transported to the boat ramp for release downstream of the dam. After the initial dipping effort, project personnel will monitor the gatewells for signs of fish problems during the extended work window. This will require additional staff time for both JFF staff and Smolt Monitoring staff.

Table 2. – Juvenile salmonid collection and transportation at Lower Granite Dam Juvenile Fish Facility, 2006 to 2012. Data collected by USACE.

	Collected			Trucked			Barged		
Year	Aug	Sept	Oct	Aug	Sept	Oct	Aug	Sept	Oct
2006	1,841	2,107	4,219	613	2,071	4,067	1,425	0	0
2007	2,056	1,124	10,407	553	721	6,281	1,432	0	0
2008	21,047	9,220	8,731	6,032	4,560	6,007	16,033	0	0
2009	3,044	2,002	2,115	1,012	1,246	1,334	1,957	0	0
2010	8,907	8,436	11,436	3,071	5,523	8,000	5,637	0	0
2011	6,498	14,307	5,721	1,692	10,577	3,206	6,330	0	0
2012	8,121	6,443	12,255	2,040	3,774	9,068	5,875	0	0

Adult fish passage under low tailrace flow conditions will need to be monitored for any delay associated with adverse tailrace conditions. If necessary, unit operation or spill distribution and timing will be adaptively managed as appropriate, within the constraints of water availability, to improve adult fish passage conditions. RSW operation is expected to aid fish falling back with a safe passage route.

Table 3. – Adult salmonid fallback at Lower Granite Dam, 2006 to 2012. Data collected by USACE personnel as adult salmonids cross the JFF separator.

Year	August	September	October
2006	51	335	630
2007	67	270	846
2008	275	798	2,253
2009	247	3,462	2,940
2010	477	1,202	1,919
2011	179	1,547	2,787
2012	81	752	2,090

Comments from agencies
Final results