

## MEMORANDUM FOR THE RECORD

Subject: Final minutes for the 12 November 2015 FPOM meeting.

The meeting was held at the Columbia Room CRITFC, Portland OR. In attendance:

<b>Last</b>	<b>First</b>	<b>Agency</b>	<b>Email</b>
Bailey	John	NWW	<a href="mailto:John.c.bailey@usace.army.mil">John.c.bailey@usace.army.mil</a>
Barnes	Chuck	NWW	<a href="mailto:Charles.a.barnes@usace.army.mil">Charles.a.barnes@usace.army.mil</a>
Baus	Doug	NWD-RCC	<a href="mailto:Douglas.M.Baus@usace.army.mil">Douglas.M.Baus@usace.army.mil</a>
Benner	Dave	FPC	<a href="mailto:dbenner@fpc.org">dbenner@fpc.org</a>
Bettin	Scott	BPA	<a href="mailto:swbettin@bpa.gov">swbettin@bpa.gov</a>
Conder	Trevor	NOAA	<a href="mailto:trevor.conder@noaa.gov">trevor.conder@noaa.gov</a>
Cordie	Bob	NWP-TDA	<a href="mailto:Robert.P.Cordie@usace.army.mil">Robert.P.Cordie@usace.army.mil</a>
Fredricks	Gary	NOAA	<a href="mailto:Gary.Fredricks@noaa.gov">Gary.Fredricks@noaa.gov</a>
Gibbons	Karrie	NWP	<a href="mailto:Karrie.m.gibbons@usace.army.mil">Karrie.m.gibbons@usace.army.mil</a>
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Lorz	Tom	CRITFC	<a href="mailto:lorz@critfc.org">lorz@critfc.org</a>
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Zorich	Nathan	NWP-FFU	<a href="mailto:Nathan.a.zorich@usace.army.mil">Nathan.a.zorich@usace.army.mil</a>

Bailey, Barnes, Hausmann, Kiefer, Moody, Pinney, Scott, Skalicky, Van der Leeuw, Vorheis, and Warf called in.

**November birthdays include:**

**T. Mackey, L. Ebner, E. Meyer, J. Graham, B. Klatte, N. Zorich**

**HAPPY BIRTHDAY!**

Documents may be found at: <http://www.nwd-wc.usace.army.mil/tmt/documents/FPOM/2010/>  
**Fish Passage Operation and Maintenance (FPOM) Team meeting**

## 1. Decisions made at this meeting

- 1.1. October meeting minutes approved, with edits.
- 1.2. **Coordination/Notification forms (need concurrence/discussion)**
  - 1.2.1. **15BON87** PH1 main unit breaker replacement. **Pending**
  - 1.2.2. **15TDA12** MFR fishlock stranding. **Additional comments made.**
  - 1.2.3. **15TDA13** Rail removal. **Pending.**
  - 1.2.4. **15TDA14** F1 outage updated. **Approved with additional information.**
  - 1.2.5. **15JDA12** MU1 digital governor testing. **FPOM would like language added to the FPP regarding installing tail logs for digital governor work.**
  - 1.2.6. **15MCN12** Commissioning N. Wasco PUD Hydroelectric project. **Approved.**
  - 1.2.7. **15 IHR 015** Lower South Shore Fish Ladder Bulkhead Replacement. **Denied.**
  - 1.2.8. **15 IHR 16** – Fish trap installation to finish PIT detection capability. **Pending.**
- 1.3. FPOM concurred with raising the BON forebay to find an upper limit for when WS is isolated from CI.
- 1.4. BON fish unit floating for debris. FPOM agreed it should be documented in an MFR every time. *UPDATE: further discussion with Fredricks and Lorz has resulted in agreement that the floating for debris will be documented in the weekly reports and then summarized monthly in an MFR.*
- 1.5. BON CI subsidence. FPOM would like this to be a regular update at each meeting. FPOM did not make a recommendation as to whether or not BO2 needs to continue to be available for PIT tag detections. That decision is for the fish managers.

## 2. Action Items

- 2.1. NWW Action Items
  - 2.1.1. [Nov 15] MCN FOGs. **ACTION:** Setter will provide FPOM an update every couple of months.
  - 2.1.2. [Nov 15] LGS temperature monitoring in the scroll case. **ACTION:** Setter will coordinate with Pinney and Burgess regarding the scroll case temperature monitoring.
  - 2.1.3. [Nov 15] DWR hatchery de-gassers. **ACTION:** Skalicky will check with USFWS hatchery to see how the new de-gassers are working and if they plan to test them.
  - 2.1.4. [Oct 15] NWW outages. **ACTION:** Send update to Mackey to post. Color coordinate and add horizontal shading to better distinguish each project. **STATUS: completed.** *Setter said the outage schedule has been updated in a new format. Research equipment removal has been taken off the list. Setter said there may be a request related to a one month outage for construction at the LWG primary bypass outfall. Setter said MCN will create a MOC next November to coordinate the dewatering screen cleaner repairs.*
    - 2.1.4.1. IHR. Kiefer asked if the Unit 2 fix blade at IHR is going to be welded. Setter said no, it will be a replacement. Setter said it is the beginning of the three units that will have new runners put in.
    - 2.1.4.2. Dworshak. Conder asked if the beginning of August 2016 is a good time to begin the Unit 3 overhaul. Lorz said we shouldn't need the unit; there should be enough flow from spill and the other units. Conder asked if spill is as cold as the unit flow. Lorz said yes, the regulating outlets will be able to compensate. Setter noted that spill may be 7.5kcfs rather than 10kcfs. The spill bays are set high and the pool levels are low, so spill may be limited to 7.5kcfs in August. Lorz said by mid-August we

haven't been above 10kcf. Lorz asked if NWW is creating a plan to spill above the 110 gas standard. Setter said this should be addressed to Steve Hall in Water Management. Wright said it has been part of the conversation and it needs planning. Setter suggested having Hall call in for either the December or January FPOM meeting. Fredricks asked Lorz if he knows what the waiver will need to be. Lorz said they could handle close to 120%. Lorz said he needs to check with USFWS to see how the new de-gassers are working at the hatchery, which is the main limitation. Skalicky said he would get an update from the hatchery. Setter said all of the de-gassers are in but they have not tested all of them. FPOM discussed the need to test the de-gassers sooner rather than later. **ACTION:** Skalicky will check with USFWS hatchery to see how the new de-gassers are working, if they plan to test them and what the highest TDG they are comfortable having in-river now.

- 2.1.5.** [Oct 15] LGS temperature monitoring. **Status:** Pinney provided a diagram of the tailrace locations and it is posted on the website. **Update:** Setter said there were concerns regarding adequate locations in the tailrace to assist with any potential troubleshooting in the future, due to the location of the TDG monitoring station. Pinney said it reflects an expansion of what has been done at LWG. Pinney said they have added one station on the navlock wall and added three stations downstream to monitor the effects on temperatures by the surface weir and units 1 and 2. Wright asked how the data will be reported and if it will be downloaded by satellite or manually downloaded. Pinney said NWW is looking to upload by satellite, similar to LWG. Hevlin said the plan looks good, but there needs to be monitoring in units 1 and/or 2 scroll cases. Lorz agreed that the scroll case is a good measure of the temperature of what coming out downstream. Pinney asked if there is any interest in having a monitoring station in the collection channel. Hevlin said the entrance junction pool will cover the lower ladder on the south side. Pinney asked if there is a need for the north side channel to be monitored. Hevlin didn't see a need for that. Morrill asked about a station in the north shore junction pool. Pinney responded that there is re-circulating water but NWW has not looked closely inside the entrance or the channel through the spillway. Skalicky asked if NWW is confident that differences between the ladder temps and the water temps just below the ladder can be seen. Pinney said yes. Skalicky reiterated that those data should adequately show the differences of ambient temperatures and the ladder. Pinney agreed. Hevlin said we also want the temperature strings in the forebay, so we know if there are any cold water layers in the forebay. Lorz said another location to consider is near the spillway sill level because there is not, currently, data that supports shutting off spill. Pinney said they did install a monitoring station on the bypass pipe, downstream of the TSW. Pinney said it will be easy to install one on the spillway pier nose at 10' intervals. Bailey noted an error in the plan and said diffuser 15 should be changed to diffuser 13. Pinney will make the change.

- 2.1.5.1.** Lorz asked about the scroll case monitoring, moving away from the mercury thermometers. Setter said Burgess called in and discussed plans during the October FPOM meeting. Setter said Burgess will include temperatures in his weekly inspections and he will increase monitoring if and when it is needed. Conder asked why the scroll case thermometer cannot be changed to digital. Setter said it is a long term goal for Burgess. **ACTION:** Setter will coordinate with Pinney and Burgess regarding the scroll case temperature monitoring.

- 2.1.5.2. Skalicky asked if NWW tests navlock cycling in the future, could a probe be installed there. Setter said NWW will not likely support it. Setter asked Pinney how much each site costs and who will be funds it. Pinney said CRFM funds the installation, but didn't know the cost.
- 2.1.5.3. Zorich asked is there any interest in covering the juvenile system. NWW has temperature monitoring in the juvenile system, but it is not in digital format. CRFM is funding the adult fishway temperature monitoring study and may not provide funding for any additional juvenile monitoring. Morrill asked about solar radiation exposure for the sampling tank. Setter said there is water entering from the primary dewater and goes through a covered flume, and just before the separator is the head tank which is the mixed water coming from the forebay and the units, minimal solar exposure. Setter said in 2017 there will be a secondary backup to operate the adult trap at LWG, but at LGS the water is largely being used to operate the sampling facility.

## 2.2. NWP Action Items.

- 2.2.1. **15BON87** PH1 main unit breaker replacement. **ACTION:** Gibbons & Hausmann update MOC with proposed 15 April, proposed unit priority, flow data and resend.
- 2.2.2. [Nov 15] Pinniped Hazing. **ACTION:** Van der Leeuw and Gibbons will update the USDA task order.
- 2.2.3. [Nov 15] JDA Avian Array. **ACTION:** JDA avian array needs to go back to FFDRWG for review and potentially redesign.
- 2.2.4. [Nov 15] TDA Fish unit outage. **ACTION:** Mackey will send winter counts for TDA to Cordie for inclusion in the MOC.
- 2.2.5. [Jun 15] TDA adult flows. **ACTION:** Mackey will schedule a separate meeting to further discuss this issue. **Status:** This meeting is scheduled after November FPOM.
- 2.2.6. [Oct 15] JDA sturgeon issues. **ACTION:** Zyndol will provide a diagram of the gatewell. Mackey asked if Skalicky received diagram. **STATUS: the diagram is available on the website and was sent to Skalicky.**
- 2.2.7. [Oct 15] Critical Infrastructure. Gibbons will schedule a meeting to discuss TDA fish infrastructure. **ACTION:** Gibbons to schedule with TDA. **Status: Gibbons will send out in a week.**

## 3. Updates

### 3.1. NWW Updates.

#### 3.1.1. Upcoming maintenance/construction/research activities.

3.1.1.1. FPOM OUTAGES available on the web site.

3.1.1.2. MCN FOGs maintenance. Setter said last year three FOGs were taken out for maintenance, work should be completed by February. One set has come back from BON sandblaster; MCN will receive the other two sets next week. Setter said orifice gates 3, 4, and 14 are out; there are a total of 12 FOGs. Setter said we can look for a schematic to show the numbering. Fredricks said it is important to have a schedule to cycle through maintenance. Setter said it takes a day to pull them out and a day to install them, the holdup is the sandblasting. Setter said right now the plan is to pull three at a time. Fredricks suggested starting with the worst ones. **ACTION: Setter will provide FPOM an update every couple of months.** FPOM asked about the gate wheels. Bettin asked about maintenance intervals. Setter said the focus is on the gates within the guides and she doesn't have the maintenance records. Cordie asked

if the guides are damaged. Setter said she is not aware of the guides being damaged. Cordie said they are discussing laying steel over the top of the damaged guides at TDA. Cordie noted that TDA is using UHMW wheels. Setter said she will find out what materials MCN is using.

**3.1.2.** Report back to S. Bettin on:

**3.1.2.1.** 2015 LWG rental pump cost. Setter said the cost was about \$200,000. Rental agreement is a minimum of 3 months.

**3.1.2.2.** Cost of electrical design and implementation was about \$21,000.

**3.1.2.3.** Timeframe to purchase pumps. Setter said it is about 6 months if you already know what you need. Setter said it is more complicated to get pumps at LGS than LWG. Conder asked if the difficulty is for rental pumps or permanent pumps. Setter said rental for now, but need to look at a permanent structure for the future. Setter said funding has not been re-programmed yet. Lorz said he will send a letter if it will help to move the process along. Bettin said we have already missed the window for next year. Setter said not yet, but we are getting close. Setter said a PM has been assigned to the PDT, but the PDT is waiting for funding.

**3.2.** NWP Updates

**3.2.1.** Upcoming maintenance/construction/research activities. Includes already coordinated MOCs.

**3.2.1.1.** NWP winter maintenance schedules (available online)

**3.2.1.2.** 15BON02 T11 and T12 outages. T11 is due back on 22 November.

Fredricks said when he did the inspection PH2 was down, including the fish units and all of the ladders were OOS in the morning. Fredricks asked if this was coordinated in a MOC. Hausmann said T12 was taken down to install the isolation valves on the transformers; it was included in the MOC. Mackey said the MOC had been approved but the trash racks were being raked during the outage of T12, which was poor timing. Fredricks said there were sea lions present taking advantage of any passage delay.

**3.2.1.3.** 15BON06 CI fish valve repair. Hausmann said it is going as planned and fish valve 5-3 is back in. Fish valve 5-4 is almost ready and will be installed next week. Hausmann said it should be done by 30 November.

**3.2.1.4.** 15BON84 CI dewatering. Hausmann said the dewatering went well. Hausmann said BON is hoping to test the forebay range when WS is isolated from CI. Hausmann said the forebay is currently held at around 73.5' msl. He noted it may be possible to have a higher forebay. Mackey asked if the purpose for wanting to raise the forebay is for Spring Creek hatchery. Bettin said it would be for chum. Fredricks asked if Hausmann has looked into the reason why WA shore could not operate properly at a higher forebay when isolated from CI. Hausmann suggested opening the bleed off at the overflow section in conjunction with the drain valve in the UMT, but it will not be an appropriate fix for the serpentine section. Hausmann said there aren't any other inputs of water and it was flooding at 75.5 forebay elevation. Fredricks asked if Hausmann contacted someone in NWP to see how the ladder water level control system was designed to operate with the UMT closed. Mackey asked Hausmann if he has checked the bleed-off screens between FV 6-9 and the ladder. Hausmann said they are clean and water is flowing. Hausmann said he can speak with Schlenker. Rerecich said the

information should be in the HELCRABS report. Fredricks would like to see the project discuss it with Schlenker. Mackey said it hasn't always been this way. Lorz asked Fredricks if he was ok testing the range of the forebay. **Fredricks approved. Bettin said it will need to be coordinated so we don't affect the chum.**

**3.2.1.5.** 15BON86 Powerhouse priority switching. Hausmann said it would have been fine except for the unfortunate timing for trash racks raking. Hausmann said fish passage shifted to BI during this week. Fredricks is concerned about the sea lions present in the tailrace when the fish are delayed.

**3.2.2.** Fish unit raking at B2. Lorz said it doesn't seem like the problem has been solved. Lorz asked is this due to a lack of personnel. Hausmann said some of the instances have occurred on weekend and it is a man power and prioritization issue. Fredricks suggested a review of how often floating for debris occurs to see if it is a weekend issue. FPOM would like to see the rake tested during a high debris year and for BON to continue monitoring. The rake may need to be modified if budget and personnel cannot keep up. Floating the units for debris should be reported in the weekly reports and in MFRs. Lorz clarified that if the units are shut off due to lamprey operations then that is different and shouldn't be noted in an MFR. Mackey said if keeping the fish unit trash racks clean is an issue, then it needs to be reported. Since floating trash is a deviation from FPP criteria, it should be noted in an MFR. Hausmann said it is in the weekly reports already. **FPOM agreed it should be documented in an MFR every time. UPDATE: further discussion with Fredricks and Lorz has resulted in agreement that the floating for debris will be documented in the weekly reports and then summarized monthly in an MFR.**

**3.2.3.** CI subsidence. Warf said it is possible to relocate the PIT tag room and move the electronics to the other side of the ladder. Warf said he sent a letter to the PIT-tag steering committee asking if moving the building and re-routing wires is necessary. Right now, PITAGIS has not been told the area is too unsafe to access for conducting normal PIT tag equipment maintenance. Fredricks expressed concerns about the safety and stability of the Cascades Island fishway. Hausmann said the subsidence has been occurring for awhile and last year there was an incident that spurred further investigation. The Project has investigated the old Fish Lab piping, done ground penetrating sonar, and some other investigative work. No conclusive results have come from those investigations, other than there is a hole and material is going somewhere. Most recently BON released dye into one of the subsidence areas and had it show up in the lower diffuser pits. Rerecich said the CI subsidence has been identified as one of the potential failure modes in the BON major rehab report.

**3.2.3.1.** Fredricks asked when the last time the CI exit was open. Hausmann said in the last eleven years, only one instance of running it for normal use. Bettin asked if a plan is needed in case the ladder fails. Fredricks said this needs to be a bigger team looking at this. Bettin asked if anything is needed from BPA that will help get the work done faster. Mackey said it is on the critical infrastructure list and the BON Major Rehab PDT has elevated the issue. Mackey explained that BON Major Rehab is looking at all of the components of the dam outside of the powerhouses. Rerecich said there will be a report available that will be sent to FPOM. **FPOM would like this to be a regular update at each meeting. FPOM did not make a recommendation as to whether or not BO2 needs to continue to be available for PIT tag detections. That decision is for the fish managers.**

- 3.2.4. TDA spill bay 9 trunnion pin. Mackey said it is going back to small projects. Lorz asked about the wire ropes. Mackey said the wire ropes were prioritized below the trunnion pin.
- 3.2.5. JDA-N AWS testing. Mackey said it did occur this month, no issues reported. Lorz asked will we get an update in the future. Mackey said yes.
- 3.2.6. JDA avian line break. Mackey said we will provide an update in December. Fredricks said this will need to go back to CRFM follow-on. **ACTION: JDA avian array needs to go back to FFDRWG for review and potentially redesign.**

3.3. Research/FFDRWG updates. [www.nwd-wc.usace.army.mil/tmt/documents/FPOM/2010/NWP%20Research/Research.html](http://www.nwd-wc.usace.army.mil/tmt/documents/FPOM/2010/NWP%20Research/Research.html)

- 3.3.1. Next FFDRWG meeting is 3 December.
- 3.3.2. B2 FGE. Rerecich said the DDR is scheduled to be sent to FFDRWG for review around 20 November.

3.4. RCC update.

**Table 1. RCC flow forecast.**

Project	Previous day average (kcfs)	5 day forecast average (kcfs)	10 day forecast average (kcfs)	Projected Peak
LWG	19.5	17.5	18.5	
MCN	109	113	119	
BON	123	125	128	

3.5. Pinniped Update. Van der Leeuw said the task group met 2 November. Gibbons sent out minutes. Van der Leeuw said ODFW trapped a branded California sea lion (ZCA) in the forebay on 20 October and transported to coast. Van der Leeuw said there is another ZCA in the forebay and is using the trap regularly; the states are planning to get a crew together to trap sometime this winter. Van der Leeuw said the maximum number of sea lions for this fall is 29 Steller sea lions (EJU) in one day, we have identified 29 individuals, most of them are repeat animals, and 3 ZCA identified but they are not staying as long. Predation is being recorded, if it occurs, while observers are collecting counts. Van der Leeuw said 41 Chinook/Coho catches, 3 Steelhead, 3 sturgeon, 3 shad, 1 chum, and 13 unknown catches have been observed this fall. Fredricks said he did see two catches, one at each powerhouse. Conder said the task group discussed hazing EJU's off Tower Island and if this is something NWP plans to do. Van der Leeuw said that would require a change to the USDA contract. Mackey said we would be able to add it to the task order. Conder would like it added. Van der Leeuw said sea lions haul out further downstream, about 12 miles at Phoca Rock, and come up to the dam to feed during this time of year. Van der Leeuw said it would be preferable to haze them from Tower Island. Bettin said the point of the hazing program is to keep sea lions away from the fishway entrances. Van der Leeuw said there is a possibility that they will feed at night if they are hazed during the day. **ACTION: Van der Leeuw and Gibbons will update the USDA task order.** Lorz asked if the sea lions in the forebay are going through the navlock and how can they be kept below the dam. Van der Leeuw said they are sneaking through the navlock, likely at night because it is more difficult for the operators to see them. Van der Leeuw said the high numbers of sea lions we had this past season made it more difficult to keep them out of the navlock. Skalicky asked if there is a requirement to remove them from the forebay. Van der Leeuw said there isn't any hazing and very little competition for food, so there isn't much incentive to leave. Van der Leeuw said there are two animals at TDA and the States have tried to trap them. Van der Leeuw said ODFW is limited on funding and personnel. Conder asked what was the reason the animal

didn't meet the lethal removal. Van der Leeuw said lethal removal is now included for the forebay animals, but they have to be seen for five days between 1 January and 31 May, so these animals weren't identified until the trap was moved to the forebay. Bettin asked NOAA if the permit could be written for any sea lion above BON would be included. Conder said they are trying to be more aggressive when they revise the permit.

3.6. Lamprey updates. No updates.

3.7. Avian. No updates.

3.8. BPA updates. No updates.

#### 4. Coordination/Notification forms (need concurrence/discussion)

4.1. 15BON87 PH1 main unit breaker replacement. The delay in getting units 9 and 10 completed within the winter maintenance period is due to the contractor not submitting a suitable plan to HDC. Breakers will be onsite in early January, but the completion estimate would be mid-April. Fredricks would like to have the work done by 15 April. Fredricks said while units are OOS, the unit priority in the FPP needs to be adjusted and would like to look at the non-existent BON model. Bettin asked Hausmann how many breakers are being replaced. Hausmann is unsure of the total number and will find out. Mackey said the MOC will include historical flow data and PH2 units expected to be available. Fredricks said to have the work completed by 15 April and look at the unit priority. **ACTION: Gibbons & Hausmann update MOC with proposed 15 April, proposed unit priority, flow data and resend. Pending**

4.2. 15TDA12 MFR fishlock stranding. Cordie said they noticed a minimum of eight salmonids, likely sockeye. The forebay bulkheads were out to keep the plumbing charged with water because it is the irrigation source. The valves leak in the valve room and there is not a seal on the 42 inch valve anymore. Cordie said they didn't know the valves downstream leak also; the discharge from the fishlock goes into the cul-de-sac and is creating attraction water. Cordie said the TDA maintenance crew said there is a gap between the valve and the wall that you can stick your arm through. Fredricks asked what the velocity is through the gap. Cordie said the first valve that leaks slows down the head pressure and the valves downstream do not have a head pressure. Cordie said they put the forebay bulkheads in to stop the attraction flow. Cordie said they are unable to get fish the out because it has to be pumped. Cordie said they put a ROV in, the grating is out but they were unable to see any leaks. Cordie said they put a fyke trap in, but it didn't work. Cordie said he doesn't think they will be able to get any of the fish out. Fredricks asked Cordie if they saw any fish with the ROV. Cordie said no. Zorich asked if the valves could be flushed. Cordie said the valves are all open. Cordie said hope is once they stop the flow, maybe the fish will work their way out. Cordie has not seen any fish in there lately. Cordie said we need to come up with plan to fix it for next year. Cordie said the AWS project will take everything out, but we will have all next season to deal with this. Cordie will ask if they can expedite removing the fishlock once the AWS contract begins. Fredricks said he is concerned about screening the irrigation water if they need to come up with a pump system.

4.3. 15TDA13 Rail removal. Cordie said the rail removal over the east fishway exit will be the first two weeks of August. Mackey said it will be in phase one of the AWS contract, so it still conflicts with October and November timeframe. Fredricks and Lorz are not ok with the August timeframe. Bettin asked how long the section near the exit is. Cordie said it is about 100 feet. Bettin suggested taking out the section in the middle now to work around the in water work period. Bettin suggested the project may be able to do the work. Fredricks is not ready to approve this MOC yet. Cordie said the rails on the tailrace deck will be removed during the in water work period but he couldn't remember why they couldn't remove the exit section also. Lorz asked Rerecich if there were other construction projects at this time. Mackey said she thought it was due to occupying too much of same space. Bettin said the



issue was with the AWS contract during phase 2, but since it will be phase 1 now, maybe they can go back to the October or November timeframe. **ACTION: Cordie will follow-up. Pending.**

- 4.4. 15TDA14 F1 outage updated.** Cordie said the north ladder will be dewatered in December. F2 will be out the entire month of December to work on thrust bearing coolers and F1 will be operating during this time. On 3 December divers will inspect TDA-N grating and trash rack, so TDA would like to also have them inspect the MU21 tail log sill. Cordie said they think debris is being pushed into the sill. Fredricks asked if the divers are inspecting just for debris. Cordie said it the inspection will be for debris and to check the seals. The dive will need to occur during daylight hours. Fredricks expressed concern that the MOC says the impact on fish passage is none when there will be some impact. Fredricks said the MOC needs to include more data to support the impacts to fish. Fredricks said to include whatever data we have. **ACTION: Mackey will send winter counts for TDA to Cordie.** Fredricks would like an update to the MOC including fish passage data. **Approved.**
- 4.5. 15JDA12 MU1 digital governor testing.** Lorz asked what the strategy is for going forward. Mackey said tail logs will be installed in the future. Lorz asked if they received any data from the fish. Mackey said they were scanned for PIT tags. Lorz asked why FPOM recommendations were not given more weight. Cordie said he spoke with the maintenance manager, who said there is a long record of the digital governor work and no problems. Cordie said all of TDA and eleven units at JDA were completed without incident, so the thought was there is an anomaly for Units 15 and 16. Cordie said the reluctance to place the tail logs is because it is a hardship; it takes two extra days of labor and a two day delay on the contract, per unit, and requires overtime work. Morrill asked why NWP ignored the FPP and the concerns of FPOM. Mackey said the digital governor testing is not in the FPP. Fredricks said FPOM recommended placing the tail logs and were told it will not be a problem, but it was a problem. Lorz said it was a calculated risk. Mackey said going forward we will be putting in tail logs. Skalicky asked about documentation. Mackey said digital governor testing is not currently in the FPP, so if we want to add digital testing protocol then a change form is needed. Fredricks said what we should learn from this is that we don't know as much about sturgeon. Cordie said sometimes we are surprised because it is infrequent when we see them at the project. Bettin said it goes back to needing something simple, like a chain link fence, to prevent sturgeon from entering the draft tube. **FPOM would like language added to the FPP.**
- 4.6. 15MCN12 Commissioning N. Wasco PUD Hydroelectric project.** Martinson said PUD is replacing the rudder on the turbine. PUD will begin commissioning around 19 February. The first two days the unit will be running at less than full capacity which will deliver less flow to the ladder. They plan to use the auxiliary system to augment flow to try to bring it up to normal levels. There will be periods where it will not meet full flow, but it will only be a two day period. The Oregon ladder will also be down during this time. Fredricks said not to let it go later. Lorz said to keep it in February. **Approved.**
- 4.7. 15 IHR 015 Lower South Shore Fish Ladder Bulkhead Replacement (Brian V).** Vorheis said the collection channel has steel bulkheads in place and they need to be replaced with concrete bulkheads. The steel bulkheads require inspection. The plan is to dewater in January, but the steel bulkheads will need to be inspected prior to work getting started. Vorheis said they would like to replace the bulkheads in December, but the south shore fish pumps have to be shut down, causing the south ladder to be OOC. Vorheis said it will take two days, if we can't do it now, will have to do it in January costing two days of the ladder outage. Vorheis said the request is for December 8-9. Setter asked Vorheis if these bulkheads are changed out, you will be able to dewater the south ladder. Vorheis said yes, but we may lose critical time if we wait until January. Setter said the ROV inspection was last year. Lorz said if you lose two days of the dewatering timeframe, I would rather give you an extension the end of

March, rather than in December. Vorheis said 5 March is the navlock outage. Vorheis said there may be time the first three days of March. Lorz asked looking at workload, do you think you have more projects that will take more time. Vorheis said the concern is that the mud valves do not work and we have to use portable pumps. Vorheis said the south ladder has been extended by five weeks, if we can push the north ladder into March that would work also. Conder said he would rather wait until March because Steelhead will be around in December. Setter said once temperatures cool down there isn't as much movement for Steelhead, but the spring will have Steelhead that have over-wintered, would December be a safer time. Conder said if it was around 20 December he would feel more comfortable. Vorheis said the workload for early December supports the work. Conder said you could spill to solve for attraction. Setter said this is on hold, but it will be revised if the project finds something unexpected. Vorheis said they will still do the work previously scheduled, but it is more risk to wait. Vorheis said he will work with it. Setter said the path forward is to address during the IWW, if you run into unforeseen problems, we will address it then.

**Denied.**

**4.8.15 IHR 16** – Fish trap installation to finish PIT detection capability (Don Warf?). Warf said they need to finish the installation of the PIT detection and they are requesting to begin the work the week of 7 December. Warf said the antennae needs to be installed and a light panel. Warf said to do the installation well, it will need to be installed in-water. The hope is to have it completed in two days, but they are requesting one week. Conder asked if there will be any grinding or drilling. Warf said they do plan on drilling but it will be above the concrete surface above the ladder, not directly over the ladder. Conder asked can you do the drilling after the trap is installed. Warf said they want to do the work in-water so they will know where to keep the disconnects out of the water and splash zones. Warf said they could wait to drill until the ladder goes down. Bettin asked how long it will take to drill the hole. Warf said it would take a couple of minutes. Setter asked if the work could be done in the afternoon. Conder said in the afternoon, closer to 14 December and use zip ties to hold the equipment together he is comfortable with it. Warf said this will work. Lorz said you could do the drilling at night. Lorz and Conder are comfortable with drilling at night. Setter said to alter the MOC to reflect laying out the equipment late afternoon and drilling will be 30 minutes after dark. Setter said Warf and Fone will revise the MOC to reflect the changes.

**Pending.**

**5. Fish Passage Plan:** The Current 2015 FPP and Change Forms are online at: <http://www.nwd-wc.usace.army.mil/tmt/documents/fpp/>.

**5.1.** Pending FPP Change Forms. Pushed out until testing low flows at ERDC (Sept 21) change forms

**5.1.1.** 15IHR008 – Low Flow Spill Patterns. **Pending.** Revised based on last ERDC trip. And will be ready at December FPOM.

**5.1.2.** 15LMN004 – Low Flow Spill Patterns. **Pending.**

**5.2.** New FPP Change Forms. Setter said we need to send out a notification when we are in the open period. Fredricks asked what the timing is for the change forms. Mackey said by the end of December we have incorporated the changes, by the third week in January we will have the meeting. Wright said to incorporate into the printed version of the FPP, submission will need to be in by the third week of January.

**5.3.** Potential FPP change forms.

**5.3.1.** B2 Turbine blade angle. Fredricks said there will be a draft change form. It will be a soft constraint. There is a strong recommendation from COE-ERDC staff that the lower 1% is adverse for fish passage. Fredricks and Meyer will produce a report (distributed October 13).

- 5.3.2. Appendix B – Transport. Revise truck transport minimums if supported by data analysis to determine likely effects, including frequency and duration. Wagner will request NOAA Montlake to look at the data.

## 6. Task Group Updates.

### 6.1. New Task Groups.

- 6.1.1. BON minimum spill to maintain good B2CC egress. (Fredricks and Lorz). Team members include: Bettin, Ebner, Hausmann, Mackey, Rerecich, Wright. Report from Laurie, waiting for ERDC information
- 6.1.2. Load Shaping Guidelines (Bettin). Team members include: Fredricks, Mackey, Wright. Bettin is still figuring out if he is allowed to edit Appendix C (last modified in 1995). FPOM believes this will be delayed until next year.

### 6.2. Active Task Groups.

- 6.2.1. Adult counting. (Wertheimer/Zorich and Moody) <http://www.nwd-wc.usace.army.mil/tmt/documents/FPOM/2010/Task%20Groups/Task%20Group%20Fish%20Counting/> contracting issues are getting resolved, cost issues and contracting; 1 year and 2 option years (3 year contract); new technology may allow a change in process
- 6.2.1.1. TDA count window mods Mackey asked Zorich for a report. Zorich said there were two tests, but it occurred prior to fish passage and saw minimal fish. The second test we could not get funding at the end of the fiscal year to get new lighting. Lorz asked if the color behind the crowder worked. Zorich said the color of the crowder glass is discolored and difficult to see the color. Zorich said there were issues of the IR lighting overheating in the summer and some bulbs burned out. Zorich said we would like to use IR filters on the side bars and test the lighting from bottom, sides and top. Zorich said ultimately a combination of some white light and IR will be incorporated. Zorich said the small amount of testing did show there is a change in fish behavior when they are exposed to the full amount of light for video.
- 6.2.1.2. Fish Count Contract update. Moody said the panel met and made recommendations to select a new contractor for the next three years of fish counting. Moody said it will be awarded as soon as funding drops. Lorz asked if it is the same contractor. Moody said yes, it is Normandeau. Skalicky asked if the price has changed from previous years. Moody said yes, it went down.
- 6.2.2. Condition monitoring. (Lorz, Conder). <http://www.nwd-wc.usace.army.mil/tmt/documents/FPOM/2010/Task%20Groups/Task%20Group%20Condition%20Monitoring/>
- 6.2.2.1. Team members include: Benner, Bettin, Chockley, Fredricks, Mackey, Morrill, Setter.
- 6.2.2.2. **This group will meet after the December FPOM meeting.** Review memo and prepare to discuss. IHR, Lorz/Conder; (more to come in December). Setter asked if there is material to read prior to the meeting. Fredricks said he will be providing a NOAA recommendation.

**6.2.3.** TDA adult flows. (Cordie) <http://www.nwd-wc.usace.army.mil/tmt/documents/FPOM/2010/Task%20Groups/Task%20Group%20TDA%20split%20flows/>

**6.2.3.1.** Team members include: Bettin, Cordie, Fredricks, Lorz, Mackey, Rerecich, Skalicky, Wertheimer.

**6.2.3.2.** This group met right after the November FPOM meeting. In attendance: Bettin, Conder, Cordie, Fredricks, Gibbons, Lorz, Mackey, Rerecich, Skalicky, Wright and Zorich.

**6.2.3.3.** Fredricks has written a proposal but he is concerned about mortality. Fredricks said we are not going to be able to do a study that will define the problem, due to the potential of delayed mortality. Fredricks said there isn't a way to define the crowding issue and delay is the tip of the iceberg. Fredricks said going forward it is still a potential problem but it may not be seen for another decade. Fredricks said the project biologists are the people that will make the call if it is an emergency. Fredricks suggested a two step approach; one, the project biologist will assess the risk, if it is an emergency, make the call to open spill; and two, if they see something in the ladder that looks bad, but not an emergency, then FPOM will discuss a path forward. Cordie said he is concerned a weekend inspector will interpret overcrowding differently. Cordie would like a picture or something more specific for guidance. Wright asked if the 20,000 fish includes all Chinook or just adults. Fredricks said we need to look at all fish passing, which will change the current numbers to 30,000 for all fish. Fredricks would like to include "*if fish passage exceeds 25,000 fish per day and there is a mortality, then begin emergency spill operation.*" Fredricks does not like the idea of waiting to trigger spill until a mortality occurs, he would like the proposal written to include "*project biologists see overcrowding or a salmonid mortality has occurred.*" Bettin said there needs to be a threshold so he can notify the schedulers that there may be a potential issue. Lorz asked if the threshold will be 35,000 at TDA-E or for both ladders. Fredricks said only TDA-E. Fredricks said at the next level it should be 40,000 fish. Bettin said we can't open spill based on a number. Bettin said once you declare an emergency, then we have coverage. Bettin asked if spill will be daytime or 24 hour. Fredricks said it will be 24 hour spill to maintain the flow net in the tailrace. Lorz suggested Fredricks make the changes and send out a revised plan to the group. Wright said the memo has been updated in a change form and it is posted in the draft. Fredricks said he is reviewing data from the 2014 ERDC trip and preparing a report which may help determine if there is an alternative spill pattern to test, but for now he suggests keeping the pattern we used in 2014. Cordie asked when getting 40,000 fish passing, will we need to coordinate with FPOM daily. Lorz and Fredricks said they would determine path forward after the initial call.