

MEMORANDUM FOR THE RECORD

Subject: Final minutes for the 14 April 2022 FPOM meeting. The meeting was held via WebEx. In attendance:

Last	First	Agency	Email
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*Called in for the Avian Updates only

1. Final decisions or recommendations made at this meeting

- 1.1. March meeting minutes were approved.
- 1.2. MOCs are required for outages that affect priority units.
- 1.3. 22BON004 MOC T12 OOS August 29 through Sept 15 Concurrence

2. Action Items

2.1. NWW

- 2.1.1.[Apr 22] **22 LWG 04 MOC T1T2 Gasket Repair- Update:** plan to schedule outages March to April for a full week and Nov 2023, completion in March-April 2024. Fall back plan is month of August for 2023 and 2024 even November if needed 2024. T2 easier to schedule as other units can be used. T2 is scheduled for July, September, and Oct of 2023. *Comments:* Conder is good with March-April and November periods, but he is not on board with August. Peery cannot take August off the table. Conder suggested an additional year or some other option to keep it in the March-April period. Lorz asked if work could be started this November. **ACTION:** Peery will discuss November 2022 start with PM. Need FPOM comments back by end of month.
- 2.1.2.[Apr 22] **20 LGS 16 MOC Powerhouse Roof Repair. ACTION:** Peery will check on scheduled work times to see if a shift in start time is possible. Morrill will check on fishery.
- 2.1.3.[Mar 22] **LMN Spillbay repair. ACTION:** Peery will check option to conduct testing in September just prior to repair work vs. in March. *STATUS: Complete, further update to come.*
- 2.1.4.[Mar 22] **Biological Services reports.** St. John requested input from FPOM on who would like to receive the contract report as well as the normal weekly report. **ACTION:** FPOM will confirm which reports they would like to receive. *STATUS:* Reports going out to those added to the list. For those who would like to be added contact St John.

2.2. NWP

- 2.2.1.[Apr 22] 22BON007 MOC U14 and U15 B2FGE Hydraulic Testing. **ACTION:** Rerecich will discuss potential change from unit 14 to 16 with Max and update with any changes. General concurrence.
- 2.2.2.[Apr 22] 22JDA008 – Orifice Operation (Grosvenor) *Change:* The units will not be operated with orifices closed. Bettin asked about timing for shut down. **ACTION:** Wright will reach out to project to clarify unit shut down language.
- 2.2.3.[Apr 22] JDA Bird counts. **ACTION:** Grosvenor and Cordie will send their Annual reports for TDA/JDA to Krasnow.

- 2.2.4.[Apr 22] **BPA BON outage. ACTION:** Bettin will inquire about moving outage to 15 July. Mackey commented that MOCs should be produced for outages that affect priority units for situational awareness and the opportunity to comment.
- 2.2.5.[Mar 22] **BON T12 outage schedule. ACTION:** FPOM will need to re-examine the language in the FPP that would require T12 outages to occur during the spring freshet. This increases the risk of PH1 operation and increased fallback with the levels of spill typically seen during the spring. *STATUS:* Project decided Aug 29-Sept 15 would be the best fit, also need to review FPP language to ensure it encompasses what is needed for fish safety.
- 2.2.6.[Mar 22] **NWP/NWW Critical Fish Passage O&M needs.** Items with a wide range of ranks were discussed and this will be re-looked at next month. **ACTION:** FPOM will assess their agency rankings and send any updates to Mackey by 9 April. *STATUS:* No comments received; list has been posted to the FPOM website. If there are changes needed to rankings send them to Mackey. Lorz wanted to confirm average scores would be used. Mackey will update the document monthly as items are funded.
- 2.2.7.[Mar 22] **Lethal Removal – Update of the NEPA progress. ACTION:** Mackey will follow up with Schmidt to ensure a written update (MFR) is provided to all FPOM members. *STATUS:* Schmidt will give the update during avian updates.
- 2.2.8.[Mar 22] **SRWG. Ranking meeting is 19 April. ACTION:** Lorz will get comments to Macdonald by Friday. Macdonald will send documents by next Friday. *STATUS:* *Completed.* Macdonald will send out responses to SRWG comments later today with ranking spreadsheet for next week. Macdonald will add Iverson to the SRWG e-mail list.
- 2.2.9.[Feb 22] **TDA velocity monitoring. ACTION:** Project will pick the monitoring strategy and report back to FPOM. *STATUS: Complete, project is moving ahead with the flow meters. No longer an action item.*
- 2.2.10. [Feb 22] **JDA ladder temps. ACTION:** Grosvenor will distribute his report prior to next FPOM. *STATUS:* Report to be completed next week. Lorz wants to ensure there is a path forward once the data comes in. Studebaker said based on the findings it may go to SRWG. Conder wants a response from the Corps addressing the USGS Lundell report, how does it address BIOP expectation to deal with temperature differentials and provide cool water if practicable and feasible. Conder is concerned that going through SWRG would delay the process. Lorz thinks this is more for FFDRWG then SRWG. Macdonald said that both FFDRWG and SRWG are standing by for FPOM review of this data. If more RME is needed than it will go to SRWG if FPOM feels it's ready to go right into designing a cooling structure than it will go to FFDRWG. Studebaker said there was funding budgeted for reaching a feasible solution.

2.3. Completed Action Items or to be discussed later in the agenda

- 2.3.1.[Mar 22] TDA AWS debris management. **ACTION:** Mackey will ping Ida Royer about this item getting on the SCT spreadsheet. *STATUS: Completed on 10 March.* Royer confirmed it is on the SCT spreadsheet.
- 2.3.2.[Mar 22] BON Kelt Trigger. **ACTION:** Wertheimer and Lorz will co-chair for task group. *STATUS:* Task group has been established.
- 2.3.3.[Mar 22] 20TDA10 MOC PUD Smolt Bypass Extended Outage. **ACTION:** Martinson will send MFR, biological testing plan, and photo link to Mackey for distribution. *STATUS: Completed and posted to the FPOM website.*
- 2.3.4.[Feb 22] BON video stream. **ACTION:** Morrill will set up follow on meeting with Peery and Derugin. *STATUS: Completed.* WDFW is waiting on a response from 4Peaks. ODFW and WDFW will proceed with procuring their own DVR.

3. Updates

3.1. NWW Updates

- 3.1.1.Upcoming maintenance/construction/research activities (previously coordinated MOC/MFRs).

- 3.1.1.1. 20 LGS 16 MOC Powerhouse Roof Repair. *Update:* BUS linkage install scheduled for 4-8 April. Roof repair will start in June and go through August. Bus linkage work delay due to ground fault issues on the power company side. Rescheduled for 18 - 22 April. *Comments:* Conder would like to push start times for work back an hour to get a couple hours of daylight for fish passage. Conder asked Morrill if there was a fishery going on. **ACTION:** Chris will check on scheduled work times to see if a shift in start time is possible. Morrill will check on fishery.
- 3.1.1.2. 21 LWG 08 MOC Trash Rake Crane Replacement (May 2022). No change.
- 3.1.1.3. McNary crane status. Cranes 6 and 7 are back in operation. *Update:* All bays open. Hoist 6 is still OOS. June is still the estimated RTS date. The spill patterns will be evaluated and adjusted as needed. Observations will occur 10 April. There was a delayed opening of bay 9, flows look good so far. Project would like to switch hoist from another bay into bay 19 so TSW has remote operation for operators. Crane at Bay 19 does not have remote operation. If an emergency closure arises there is no way to close TSW quickly. Peery said Bay 16 is the suggested hoist donor. Spill table with changes being developed, an FPP change form will be sent today or tomorrow. *Comments:* Lorz asked about debris barrier at McNary, Johnson said there is no barrier. Lorz concerned that flows may look good now but that may change, he will look at the spill table change form. Peery said plan to repair/upgrade hoist will be brought to FPOM for input. Pursuing all potential funding sources. Lorz asked if needed repairs are being put on the critical repairs list as they need to be addressed. NOAA agrees with CRITFC on concerns about these critical repairs.
- 3.1.1.4. LMN Spillbay 3 repairs. The repairs will occur in September. Modification made prior to spill start; greasing completed. 22 April for official report.
- 3.1.1.5. LWG navlock guidewall cables. Installation work completed.
- 3.1.1.6. 22 LMN 01 MOC North Fish Ladder Debris Barrier- Will not be installed in April as planned pushed out to August.
- 3.1.1.7. 21 IHR 15 MOC Unit 2 special generator testing – *Update:* Scheduled for July and Aug was based on unit 3 operation, due to delay for unit 3 RTS looking at 2-3wk delay. If anything else comes up testing may have to be postponed. IHR unit 6 priority – *Comments:* Conder felt that switching load sides of the PH should have notification or MFR created. Peery said operation change reported in weekly but agrees could be an MFR. Estimate work to be done 15-18 April, lines 1&2 back then.

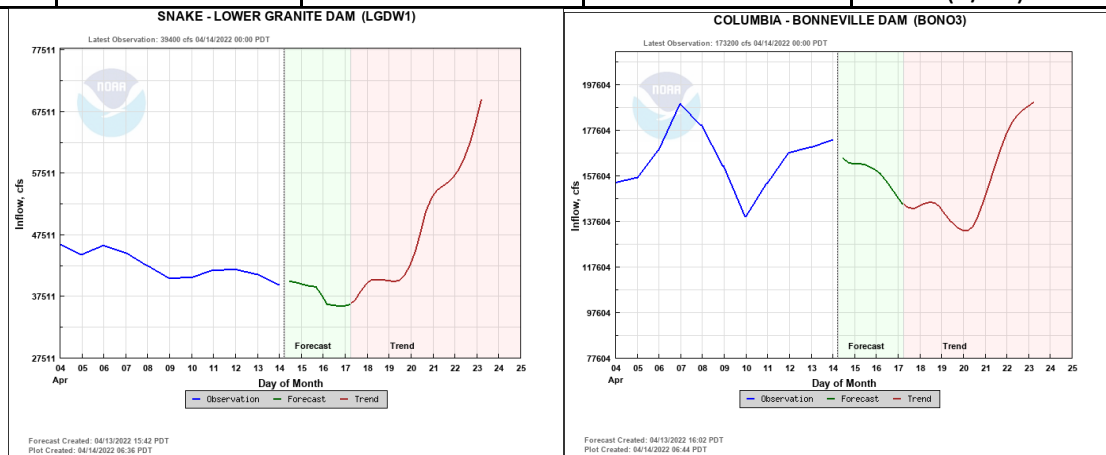
3.2. NWP Updates

- 3.2.1. Upcoming maintenance/construction/research activities (previously coordinated MOC/MFRs).
 - 3.2.1.1. 21BON001 MOC Navigation Lock 1 (old navlock) Bridge Replacement scheduled for CY 2023.
 - 3.2.1.2. 22BON004 MOC T12 OOS. *Update:* not many comments, moved outage to 29 Aug - 15 Sep. *Comments:* Lorz concurs.
 - 3.2.1.3. 22BON007 MOC U14/15 OOS for B2FGE testing. *Update:* U13 OOS until Sept. Engineers don't think this will affect U14 testing. MOC will stand. Rerecich will update later in the agenda.
 - 3.2.1.4. 19TDA04 MOC Crane rail Replacement winter (on going work). No change,
 - 3.2.1.5. 20TDA10 MOC PUD Smolt Bypass Extended Outage. *Update:* Switch gate installed, some biological testing- Four replicates of 60 fish. Recaptured 24/60, 73/60, 58/60, 61/60, fish survived well and looked good. Operation expected in early May. May not still be applicable here.
 - 3.2.1.6. 18JDA02 MOC Trash rack replacement. *Update:* Fabrication is complete. Pushed out due to design concerns on lifting beam (couple months).
 - 3.2.1.7. 20JDA04 MOC STS crane replacement. *Update:* Still in the design phase.

- 3.2.1.8. 22JDA03 MFR South Fish Turbine #2 OOS. Bulkheads going in now, couple weeks before lower guide bearing inspection.
- 3.2.2. BON Aquic-S long term solution. *Update:* No major changes for researchers in 2022. Working on long term solution.
- 3.2.3. TDA AWS debris management. *Update:* No funding, so no updates at this time. No change.
- 3.2.4. TDA trunnion pin. Gate 9 trunnion would be part of a larger project to completely rehab Gates 1-9. SAP shows Start in 2031, Construction 2034.
- 3.2.5. JDA north pump #4. *Update:* OOS for entire year no money to repair.
- 3.2.6. JDA spill bay 10. *Update:* Will still need to be operated manually. Issues with control system.
- 3.2.7. JDA N elevator #4. *Update:* Service tech out next week to replace parts to get elevator operable again.
- 3.3. NWS (Seattle) updates: no updates
- 3.4. Research/FFDRWG updates.
 - 3.4.1. NWP FFDRWG. Meeting last week, notes out for comment.
 - 3.4.2. NWW FFDRWG. Next meeting is 28 April new meeting invite later today with request for agenda items.
 - 3.4.3. SRWG. AFEP ranking on Tuesday, read ahead documents coming later today.
- 3.5. RCC update.

Table 1. NOAA Northwest River Forecast Center inflow forecast.

Project	Previous Day (4/13) Average Outflow (kcfs)	5 Day (4/18) Forecasted Inflow (kcfs)	10 Day (4/23) Forecasted Inflow (kcfs)	Forecasted Inflow Low/High (kcfs)
LWG	40	40	69	36 (4/16) / 69 (4/23)
MCN	170	134	167	118 (4/19) / 167 (4/23)
BON	174	145	190	133 (4/19) / 190 (4/23)



- 3.6. TDG monitoring presentation. (J. Reynolds) – Presentation to be posted on the FPOM site. *Summary:* TDG monitoring at LGS and LMN in 2020 and 2021. Monitoring sites established in the 90’s under different conditions. Current FPP spill requirements are significantly higher than 90’s levels. TDG levels were at times higher in the forebay of some dams than it was within the tailrace of upstream dams. 2020 TDG data indicates the fixed TW monitoring station does not

accurately measure TDG levels representative of the total river conditions during high spill with little PH flow. 2021 river flow was lower than 2020 and conclusions were unclear.

Recommendations include maintaining forebay monitoring sites, monitor at least two sites downstream and consider more robust TDG exploration in the future similar to transect studies in 2004 and 2007. There is not a lot of variation in low flow year, is more monitoring warranted in a higher flow year. *Comments:* Lorz wondered why there was no regional involvement prior. Nelson said TDG levels were concerning, and they wanted to understand it better. Lorz challenges the idea that the current TDG monitoring system isn't accurate. As systems designed in the 90's also took high level events into consideration. Nelson and Reynolds said high spill with high PH and high spill with low PH creates dramatically different patterns. Sites picked for ease of deployment. Conder said there was a bit of variation at all the locations and asked how they determined what the fully mixed river condition is, as it seemed to depend on where you measure it? So how do you conclude that it is different from the actual or true number? Conder also suggested temp and barometric pressure needs to be reviewed better. Reynolds said do we accept sites may not currently represent what it did in the past. Morrill said that from a fish perspective and health and safety of downstream and upstream migrants we don't have information that says we need to look at this in more depth. Peery said there is no call to action, but they asked to provide the information to FPOM. The question is, is more monitoring needed in a high flow year. Jay Hesse requested as discussion goes forward, caveats that current monitoring sites and the TDG levels associated with fish condition monitored at those representative sites is still ongoing. While river conditions and spill may have changed fish monitoring has not and that should be inclusive enough to identify problems. Hesse stated that the language needs to be refined so as not to be characterized to violate agreement conditions specifically tied to monitoring sites.

- 3.7. **Fish Count Program update (Peery, Wertheimer).** Currently have daytime video counts at BON, TDA, MCN, and LWG. 1 April start live counts at all projects. *Update:* live counts are underway at all projects
 - 3.7.1. BON WDFW Tule counters. *Update:* Research packets sent, DVR purchases going ahead.
- 3.8. **Pinniped update**
 - 3.8.1. Bonneville Dam. Currently monitoring tailraces. No removal updates.
 - 3.8.2. Willamette Falls. No update.
- 3.9. **Lamprey update**
 - 3.9.1. BON LPS-Start for Monday (18 April) next week. Plan to work with FFU to get counting systems running.
 - 3.9.2. TDA minor upgrades to trapping system at East. Cordie is tracking with PDT on proposed upgrade designs for various improvements for entrance/exit and LPS.
 - 3.9.3. JDA – Beginning work on PDT for water supply system. The winch has fallen over, and the handle has broken it is unsure if it is functional. Working on mod to trap box on the south fish ladder trap.
 - 3.9.4. NWW – Juvenile study ongoing at LWG, exploring other sources for fish due to small sample size. Porter asked how many were released, Peery said 60 of the 100 needed.
 - 3.9.5. Lamprey Accords Work Group (Macdonald). Response to 5-year RME plan sent, working on plans for FY23. Planned for acoustic tagging at LMN an LWG looking to add a pit tag component to study and include larvae as well as macrophthalmia.
- 3.10. **BPA update.** Spreadsheet on the FPOM website. IHR units 1-4 back on 18 April then 5 and 6 out, grid mod upgrade work. LGS, jumpers on 1-4 available 5 & 6 off. LWG 5 and 6 available at night only from 19-22 April. BON, units 11-14 end of June outage (3 weeks). Conder concerned that end of June outage is close to peak juvenile outmigration and unit 11 is attraction for the CC. Lorz suggests postponing to 15 July. **ACTION:** Bettin will inquire about moving outage to 15 July. Mackey commented that MOCs should be produced for outages that affect priority units for situational awareness and the opportunity to comment.

3.11. Avian updates (10:30)

- 3.11.1.** NWW Bird counts started April 1 - highest gull count at LWG, highest cormorant counts at MCN, low counts for other species. *Comments:* Lorz asked about strategy for the lasers. Peery said there are 2 lasers working outfall and nav lock guide wall area at MCN. LRAD is the loud directional sound system using 24-hour digital record with no noise at night. The LRAD will be mounted next to laser.
- 3.11.2.** JDA- Line installation completed, 2 dozen grebes in forebay, pelicans on Island. Yakama is hazing miller rocks started on 30 March. *Comments:* Lorz asked about types of hazing used at miller rocks. Krasnow asked about tracking bird movement. Grosvenor said bird counts are done daily at the project and air flights for terns will be done in JDA pool. **ACTION:** Grosvenor and Cordie will send their Annual reports for TDA/JDA to Krasnow. Paul Schmidt inquired about the hazing work. Eric said POC was Bill Sharp from Yakama for the LMR hazing work.
- 3.11.3.** TDA -Gull numbers 80-180 a lot down at the mouth of the Klickitat and at Miller Island. Hazers start 15 April. Falconry work is planned and currently working through contracting expected by end of May. Cormorants nest on the tower, pit tag scanner picked up 45 tags on walkway approx. 50 nests counted on the towers. *Comments:* Lorz asked about cormorant nest removal. Bettin said they are pursuing other routes as walkways are unremovable/uncoverable. Cormorant's nests need to be removed prior to eggs laid.
- 3.11.4.** BON -Bird numbers low, avian lines fixed 22 March.
- 3.11.5.** Estuary – *Update:* East Sand Island 1-acre colony has been set up and disced, installed fencing, applied herbicide, seeded pit tags, and put down productivity plots. Jake asked for pit tag seeding on the west side as well for the cormorant colony. *Comments:* Krasnow asked if vegetation was completely removed this year. Wertheimer confirmed vegetation removal. Lorz, asked if PIT seeding would be comparable. Wertheimer said methods were replicated from previous years. *Update:* Rice Island has been set up for dissuasion no nest so far, and green laser set up making sure no negative effect on Larks. Miller Pillar set up for dissuasion and monitoring. Larks -maximize dredge placement benefits. Plover signage installation next week at Bay Ocean spit to inform public and dissuade nest disturbance.
- 3.11.6.** Lethal Removal – Update of the NEPA progress (Schmidt). Still working through final stages of draft EA. Struggling with benefits of lethal. best scenario, look at gull take as 100% additive. Highest benefit for upper Columbia River steelhead if we took out 400 gulls only a benefit of 0.7%. Review times coming up with OC moving slow. Marginal benefit, intent is to selectively takes gulls foraging at the dams and measuring the benefit is going to be difficult. *Comments:* Krasnow asked if gulls catch their own prey and where they feed. Cordie and Grosvenor said in the tailrace just below avian array, gulls catch their own prey. Skiles said one of the goals of lethal is to dissuade other gulls from predation does not fall into a direct population measurement of 0.7% dissuasion isn't in that. Asked if it was necessary to quantify benefits of lethal. Schmidt said the measure of success provides justification for the action and ties into the analysis. Hazing at Miller Rocks throws a wrench in things as pit tag info is used to produce predation rates there. The best management is to treat the colonies themselves. Lorz said the proposed action in the BiOp says we are going to have effective hazing at the projects, current hazing at The Dalles is not effective and lethal is a tool to have effective hazing at the project by pushing gulls elsewhere to eat. Lorz, pointed out that gulls can eat other things besides fish. Peery suggested Schmidt talk to the USDA folks as they are the experts on the hazing program. Studebaker suggested Schmidt go to the EIS for the larger CRSO document and review the proposed actions for justification language. Krasnow said part of the justification could be the spill program given that gulls feed close to the surface. Cordie asked if the BiOp directive to have affective hazing could be used. Michelle would like to see the bird affects analysis sooner than later so they could help. Morrill commented that all activities across

the basin have a contribution and he is concerned that producing a small or irrelevant consumption rate in terms of the population size will make it that much more difficult to defend the action. Morrill stated it is a comprehensive approach to reduce predation at pinch points in the hydro system. Schmidt does not think the end of May deadline will be attainable. Lorz will discuss with his policy folks.

3.11.7. Ringold pelicans. (Wertheimer) -*Update:* 100's of white pelicans are present at the site where 4.5 million juveniles are released from the hatchery. Corps needs to ensure that fish released get adequate protection. Pelicans downgraded from threatened to sensitive now we do have the option to do indirect hazing. Suggests having personnel present at location during releases. Hope to have a plan to predation group by the end of month to come up with recommendations. *Comments:* McDowell said if moving birds off foraging area, no permit needed. McDowell said releasing at night would be helpful. Morrill said it is a volitional release.

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

4.1. NWW

4.1.1.22 LWG 05 MFR T1 Oil Fill – *Update:* transformers leaking added a monometer to track oil level, measurement was 21” below the manhole. 25” below manhole is critical depth. Dropped 1.5” four days later. Shut down T1 transformer. Outage planned next week to top the T1 off. Full powerhouse outage on 19 April except for station service. Operate Unit 5 & 6 during settling, outage again on 22 April. Test and double testing. Plan outage on 19th and 22nd. *Comments:* Morrill asked about continued leakage when it would drop to critical levels again. Continue to monitor oil drop after refill.

4.1.2.22 LWG 04 MOC T1T2 Gasket Repair- *Update:* plan to schedule outages March to April for a full week and Nov 2023, completion in March-April 2024. Fall back plan is month of August for 2023 and 2024 even November if needed 2024. T2 is easier to schedule as other units can be used. July, September, and Oct of 2023. *Comments:* Conder is good with March-April and November periods, not on board with August. Peery cannot take August off the table. Conder suggested an additional year or some other option to keep it in the March-April period. Lorz asked if work could be started this November. **ACTION:** Peery will discuss November 2022 start with PM. Need comments back by end of month.

4.1.3.22 LGS 02 MFR Spillbay #3 OOS for a day, back in service.

4.1.4.22 IHR 03 MFR South shore AWS pump outage – out for an hour.

4.1.5.22 MCN 03 MFR Spillbays 2&6 Opening Delay - already discussed

4.2. NWP

4.2.1.22JDA03 MFR South Fish Turbine 2 OOS - No additional comments

4.2.2.22JDA02 MFR North Fish Pumps Tripped - No additional comments

4.2.3.22TDA04 MFR Wasco PUD test result - No additional comments

4.2.4.22BON007 MOC U14 and U15 B2FGE Hydraulic Testing- unit 13 OOS during testing means adjacent unit not operating during unit 14 testing, per the MOC. The hydraulic engineer (PDT technical lead) suspects we'll get adequate pressure data in unit 14 to test even though unit 13 is not operating. Switching the pressure test from unit 14 to 16 may be an option as long as it aligns with BON outage schedule. Conder asked why unit 14/15. Unit 14 and 15 is middle of PH and receives the straightest flow making unit 14 and 15 the most hydraulically similar. **ACTION:** Rerecich will discuss potential change from unit 14 to 16 with Max and update with any changes. General concurrence.

4.2.5.22BON004 MOC T12 OOS 29 August through 15 Sept. No additional comments. Concurrence.

5. Fish Passage Plan

5.1. The 2022 FPP went into effect March 1 and is available online at:

pweb.crohms.org/tmt/documents/fpp/2022/

5.1.1. NEW Change Forms:

- 22JDA008 – Orifice Operation (Grosvenor) *Change*: The units will not be operated with orifices closed. Bettin asked about timing for shut down. **ACTION**: Wright will reach out to project to clarify unit shut down language.
- 22AppI001 – DWR Turbine Startup Procedure (Chatfield) *Change*: Update for the startup procedure. *Comments*: Peery clarified it just involves refinement to start up procedure eliminating redundancies. Conder asked about a slow roll startup. Peery agreed that more conversation was due about operations at DWR. Suggested a separate work group to review issues that have occurred there.

5.1.2. Turbine operating tables – updated by HDC. Recalculating efficiency of turbines based on better methodology. Wright hopes to have it at the next FPOM.

6. Task Group Updates.

6.1. Task Group 15 Mile Steelhead Overshoots, TDA ITS operation dates. (Bellerud) -Remove from agenda for now.

6.1.1. <http://pweb.crohms.org/tmt/documents/FPOM/2010/Task%20Groups/Task%20Group%20TDA%20ITS%20operations/>

6.2. Task Group Non-native Piscine Predation (Hausmann). -No update

6.2.1. <http://pweb.crohms.org/tmt/documents/FPOM/2010/Task%20Groups/Task%20Group%20Non-native%20piscivorous%20fish>

6.3. Task Group BON Kelt Trigger (Wertheimer and Lorz). Tacking on May FPOM.