

COLUMBIA RIVER TECHNICAL MANAGEMENT TEAM

April 20, 2022

Facilitator's Summary

Facilitation Team: Emily Stranz & Nancy Pionk, DS Consulting

The following Facilitator's Summary is intended to capture basic discussion, decisions, and actions, as well as point out future actions or issues that may need further discussion at upcoming meetings; it is not intended to be the "record" of the meeting. Official minutes can be found on the TMT website: <http://pweb.crohms.org/tmt/agendas/2022/>. Suggested edits for the summary are welcome and can be sent to Colby at colby@dsconsult.co.

Review Meeting Summaries & Minutes - TMT Members reviewed the meeting minutes and facilitator's summaries for March 16 and April 6. Brian Marotz, MT, requested that more context is added to the April 6 minutes regarding Joel Fenolio's response to inquiry about water flows in Montana. Melissa Haskin, BPA Notetaker, will review the meeting recording and add context to Joel's response. The meeting minutes and facilitator's summaries for March 16 and April 6 will be considered approved, pending the additional edits to the April 6 meeting minutes.

→ **Action:** Melissa will review the meeting recording to clarify the context of Joel's response and provide revisions to Joel for review, then to Doug Baus and Lisa Wright for posting.

Operations Review - Reservoirs: Joel Fenolio, Reclamation, reported on Bureau of Reclamation projects:

- **Hungry Horse:** midnight elevation was 3,529.5 feet, the project reduced releases on April 18 to 4.8 kcfs to reach the target of 3,530 feet by the end of the month. They are working to keep VarQ flows below 7 kcfs at the beginning of May. The intent is to spread spill out to reduce the percentage of TDG supersaturation and get to 3,547 – 3,550 feet by the end of May.
- **Grand Coulee:** midnight elevation was 1,249.2 feet; drum gate maintenance is on track to be completed on May 7. Releases averaged 7.5 kcfs inflows over last five days and averaged 5,900 kcfs, to reach the target of below 1,250.7 at end of month.

Lisa Wright, Corps, reported on Corps of Engineers projects:

- **Libby:** midnight elevation was 2,367.8 feet, with average inflows and outflows of 4 kcfs,
- **Albeni Falls:** midnight elevation was 2,053.7 feet, with average inflows of 33.3 kcfs, and outflows of 18.9 kcfs;
- **Dworshak:** midnight elevation was 1,527.6 feet, with average inflows of 5 kcfs, and outflows of 9.6 kcfs;
- **Lower Granite:** average outflows of 39.5 kcfs;
- **McNary:** average outflows of 123.5 kcfs; and,
- **Bonneville:** average outflows of 132 kcfs.

Aaron Marshall, Corps, reported that Lower Monumental is operating at a 0.5-foot raised MOP elevation with a minimum of 537.5 feet up to 539 feet as a hard constraint. That adjustment was made in early April to help maintain the minimum tailwater elevation at Little Goose. Lower Granite is operating according to the variable MOP operation. With inflows below 50 kcfs, Lower Granite is currently operating at a 3-foot raised MOP with a forebay elevation range of 736 -737.5 feet.

In early April two barges were damaged in the Little Goose forebay due to a bracket in the forebay of the navigation channel. The top of the bracket is at a depth of 11 feet when Little Goose is operating in MOP (minimum forebay elevation of 633 feet) which is 3 feet less than the minimum depth required for navigation. The bracket sticks out 2 feet into the navigation channel along the south side approach to the lock entrance in the forebay. The Corps marked the location of this hazard and issued a notice alerting navigators of the situation along with additional restrictions for vessels operating in the lock approach area. On April 13, the Corps coordinated with BPA and Little Goose operators to raise the minimum forebay elevation up to 636 feet, which was reached on April 14, to provide a minimum depth of 14 feet in the navigation channel for safe clearance over the hazard. The Little Goose forebay will continue to operate in a 3-foot raised MOP elevation range of 636 to 637.5 feet until the bracket

can be removed. A contractor is scheduled to remove the bracket on April 27-29. Once the bracket is removed, the Little Goose forebay will be lowered to previous level of 1-foot raised MOP to maintain the minimum tailwater elevation at Lower Granite.

Jay Hesse, Nez Perce, inquired as to whether the filling of the pool occurred during spill or performance standard operations, Aaron noted that the raising of the pool occurred over two days (April 13 and 14) and was done as gradually as possible to avoid any reductions in spill. Dan Turner, Corps, noted that there was minimum generation on system at that time, with periods of performance standard spill and periods of minimum generation, spill the rest. The intent was to ensure the FOP was followed with the target of performance standard spill of 30% for eight hours in the morning; however, with low flows and the spillway weir, it was challenging to get to the 30% target. Spill rates were 58-60% during non-performance standard hours.

During the two days when the pool was being filled, barges were advised to wait until the pool was raised. Erick Van Dyke, OR, requested information on how much navigation activity there is on Lower Snake. Erick will follow-up with Aaron regarding the specific request regarding vessel traffic on the Lower Snake.

→ **Action: Erick will connect with Aaron regarding his request regarding vessel traffic on the Lower Snake.**

Fish managers asked whether there was analysis of the impacts to migrating fish due to the raise in MOP, as raising the pool will slow water, increasing travel time for juveniles and impacting survival. Tom Lorz, Umatilla/CRITFC suggested that an MOC was appropriate to clarify biological impacts. Additionally, some fish managers expressed concern that the Corps' response impacts fish, and encouraged the Corps to consider other options, such as closing the locks during the repair, to balance the risks to fish.

Scott St. John, Corps Walla Walla District, confirmed that an MOC was developed (MOC 22-LGS-02 AWS Weir Crest Elevation During Navigational Hazard) and sent to FPOM for comments and concerns (however, it does not discuss the potential fish impacts of raising the pool 3 feet higher). Trevor Conder, NOAA, also noted that the spillway weir operation was modified to accommodate this MOP change; Trevor suggested that the spillway weir modification should go through the MFR process. As a next step, Scott will coordinate internally at the Corps to consider revising the MOC to acknowledge potential impacts to fish.

→ **Action: Scott will coordinate internally at the Corps to review and revise the Little Goose MOC to capture and acknowledge potential impacts to fish.**

Water Quality: Dan Turner, Corps, reported TDG values below the state standards, with the beginning of planned spring spill for juvenile fish passage on the Snake and Columbia rivers (125% criteria). Due to low flows, lower Snake River projects are operating at minimum generation, spill the rest.

Fish: Trevor Conder, NOAA, reported that in general both adult and yearling spring Chinook numbers are increasing. Annual passage numbers for adult spring Chinook to date are as follows:

- Bonneville: Almost 3,000 adults have passed this year, with 300 passing per day;
- McNary: 779 adult spring Chinook;
- Ice Harbor: 320 adult spring Chinook;
- Lower Monumental: 179 adult spring Chinook;
- Little Goose: 3 adults passed on 4/19 and zero passage for 4/18. The powerhouse shutdown operation to prepare for roof repair appears to be slowing fish down. Trevor expects this trend to continue through the week, and then to pass once the operation is completed and normal operations are resumed;
- Lower Granite: 56 adult spring Chinook.

Trevor reported that passage of juvenile yearling spring Chinook is increasing. The indices indicate 18,800 passing at Lower Granite, and 12,000 passing at Bonneville and McNary. Sub-yearling Chinook bumped up in mid-April and are now on the decline; passage is expected to increase later in June. Steelhead are passing consistently and are increasing.

Dave Swank, USFWS, provided an update on lamprey. He noted that there are no adult lamprey counts as this is not their seasonal passage period. For juveniles, Dave noted collection counts for McNary and Bonneville were higher two weeks ago and have since dropped off; it is likely that the higher counts were a response to higher flow events. Juvenile lamprey tend to have a longer, spread-out migration season. The counts at McNary were higher than other projects. Counts from White Bird (which uses an inclined plane) and Imnaha (which uses a screw trap) were also low.

Power System: Tony reported that the region is slowly moving out of seasonally low temperatures. The weather systems have been volatile, with reserves being deployed to balance the variable energy resources. Erick noted that it would be helpful to have a presentation to better understand the criteria used for balancing the variable energy resources. Tony suggested that this could be done at a future TMT process meeting.

Tony reviewed performance standard spill implementation. He noted that the Action Agencies were able to achieve 8-hour performance standard spill block operations in the morning at all the Lower Snake projects, except for Little Goose, which has the powerhouse outage. For Little Goose, he noted that on April 13-14, they were able to achieve the 8-hour performance standard block operation and that the river flow was reduced by 8 kcfs on non-spill block hours to fill the pool. During the performance standard spill hours, they were able to achieve 30% target operation and the remaining periods were minimum generation, spill the rest as the pool elevation was raised.

For Lower Monumental, the 8-hour performance standard spill was achieved in the morning except for days when there was not enough water to meet the operation's requirements, the project then operated at minimum generation, spill the rest. Ice Harbor, McNary, and Bonneville, were all operating at minimum generation, spill the rest. John Day was utilizing performance standard spill operation and The Dalles was implementing the FOP 40% spill operation. Tony noted that the operators dispatch units according to unit priority and the total turbine outflow is set to produce minimum generation needed to maintain reliability.

Questions or comments from members of the public – There were no questions or comments from members of the public.

Future Process Meeting Agenda: Brian suggested adding a discussion on regional experience with dydmosphenia to the May TMT process meeting.

The next scheduled TMT meeting is a conference call on April 27, 2022, at 9:00 AM.

Columbia River Regional Forum

Technical Management Team

OFFICIAL MINUTES

April 20, 2022

Minutes: Melissa Haskin, BPA (contractor, FLUX Resources)

Today's TMT meeting was held via conference call and webinar, chaired by Doug Baus, Corps, and facilitated by Emily Stranz, DS Consulting. A list of today's attendees is available at the end of these minutes.

1. Review of official meeting minutes and facilitator's summaries 3/16 and 4/6

Brian Marotz, MT, requested a change to the 4/6 official minutes. The minutes read, "Brian Marotz, MT, asked if this puts the region Hungry Horse in a better position to run on two turbines through the end of June. Joel said not in Western Montana." Brian felt that there was more context to the conversation that might have been left out. He asked Joel what he thought he said. Joel replied he probably said something like "it's probably too early to tell at this time." Brian asked that the notes be changed to that. Melissa Haskin, Notetaker, offered to review the recording and check for accuracy and context. She will do that and send a note to Joel following her review. After reviewing Melissa's notes/suggestions, Joel will then send any edits he has to Doug and Lisa. Following this change, the 3/16 and 4/6 minutes and summaries will be approved.

2. Operations Review

2a. Reservoirs – Joel Fenolio, Reclamation; Lisa Wright, Corps

Reclamation projects:

Hungry Horse – Midnight elevation 3,529.5 ft.; releasing 4.8 kcfs, likely through the week. Targeting 3,530 ft. by the end of the month to keep Var-Q flows below 7 kcfs heading into May with only 2 turbines available. Heading into May, the project will likely be spilling and Reclamation will adjust following that to hit the end-of May target of 3,547 ft.-3,550 ft. Brian Marotz, MT, asked if Reclamation is spreading out spill to reduce TDG super-saturation, as in the past. Joel replied yes. Marotz asked about how the decision to spill is made. Joel shared that for the first part of May, Reclamation has to release what the Var-Q flows are.

Grand Coulee – Midnight elevation 1,249.2 ft., releases yesterday averaged 75 kcfs. Over the past 5 days, inflows have been around 69 kcfs. Targeting to keep below the end-of-month FRM target of 1,250.7 ft. The project has been operating between 1,250 and 1,255 ft. for drum gate maintenance, which is on schedule to end May 7.

Corps projects:

Libby Dam – Midnight elevation 2,367.8 ft., yesterday's average inflows/outflows 4 kcfs.

Albeni Falls – Midnight elevation 2,053.7 ft., inflows 33.3 kcfs and outflows 18.9 kcfs.

Dworshak Dam – Midnight elevation 1,527.6 ft., inflows 5 kcfs, and outflows of 9.6 kcfs.

Lower Granite – Yesterday's average outflows were 39.5 kcfs.

McNary Dam – Yesterday’s average outflows were 123.5 kcfs.

Bonneville Dam – Yesterday’s average outflows were 132 kcfs.

MOP Operations: Aaron Marshall, Corps, had an additional update to share regarding MOP operations. At Lower Monumental, the Corps is operating at a 0.5-ft. raised MOP with a minimum of 537.5 ft. and a maximum hard constraint of 539 ft to help maintain the minimum depth in the Little Goose tailrace. This operation began in early April for navigation safety. At Lower Granite, inflows have been below 50 kcfs. This means the variable MOP operation is currently a 3-ft raised MOP range of 736 ft.-737.5 ft.

At Little Goose, two barges were damaged in the forebay just upstream of the lock entrance. The Corps investigated and determined that the damage was due to a floating guide wall anchor bracket that is part of an anchor along the land-side of the channel in the forebay. The bracket sits at a depth of 11 feet when Little Goose is operating at MOP (633 ft.). The bracket sticks out two feet into the navigation channel from the south side. The Corps has marked the location of the bracket in the forebay and issued an alert to navigators. There are now additional restrictions in the lock. On April 13, the Corps coordinated with BPA and Little Goose operators to raise the minimum forebay elevation to 636.0 feet, with a maximum of 637.5 ft hard constraint and 637.0 ft soft constraint. This provides a minimum depth of 14 ft. in the navigation channel to provide safe clearance over the hazard. The forebay reached this minimum on April 14 at 2200. The forebay will continue to operate within this 3-ft raised MOP range until the bracket can be removed. A dive team is scheduled to remove the bracket on April 27-29. Once the bracket is removed, the Corps plans to lower the forebay to the level it was at previously, which was a 1-foot raised MOP.

Jay Hesse, Nez Perce, asked if the reduction in flow on April 13-14 from the Little Goose pool being raised was during performance standard spill or the gas cap spill period. Dan Turner, Corps, noted that there was minimum generation during that period and the Corps was spilling per the FOP. There were periods of minimum generation spill the rest as well as the 8 hours of performance spill in the morning, he said.

Erick Van Dyke, OR, asked if there was any activity in the lock during the fill operation. Marshall reported that vessels were advised to wait until the pool was raised to the new minimum.

Van Dyke asked for quantification of navigation activity in the Lower Snake. Marshall will ask for this and report back. Tom Iverson, Yakama Nation, added that the Corps could have opted to close the lock for 7 days to get the repair taken care of. He added that it seems like fish operations take the brunt of compromises. Iverson asked if there was any analysis or thought as to how this operation would impact migrating fish. Turner replied that the Corps followed the FOP, which has a performance spill target of 30%. With low flows and the spillway weir, it was difficult to hit this. During non-performance hours, the Corps spilled at 58%-60%.

Tom Lorz, Umatilla Tribe/CRITFC, asked why a MOC was not sent to FPOM. Marshall replied that the change for navigation safety falls under the FOP. Doug noted that urgent real-time matters such as MOP changes are typically coordinated through the Corps NWD office and then brought to the TMT for additional coordination. Doug noted he recognizes there are some grey

areas when MOP changes affect operations. Lorz replied that the change was implemented on April 14. It now being April 20, there was more than enough time to write an MOC, he said. His concern is from a record-keeping standpoint. He believes when there is a structural issue caused by a Corps contractor that an MOC is required. Tom encourages the Corps to write an MOC. Doug will look into it and explore the request.

Trevor Conder, NOAA, added that MOCs are coordinated prior to activity but he could see the need for an MFR. Scott St. John noted that an MOC (MOC 22-LGS-02 AWS Weir Crest Elevation During Navigational Hazard) was distributed to FPOM. Chris Peery sent it out to alert FPOM of the change and request comments and concerns. Erick Van Dyke commented that the MOC does not cover the fish impacts of the operation. Ebel noted that what he is hearing is that fish managers would like acknowledgement from the Corps, in writing, that raising the pool has impacts on fish travel time and potentially survival. St. John will look into this and a possible revision to the existing MOC. Doug noted that the Corps is taking this matter seriously and added that they have worked hard to secure a contractor much earlier than originally quoted.

2b. Water Quality – Dan Turner, Corps

Dan Turner, Corps, reported that TDG has been below the 125% water quality criteria. Most projects are on minimums due to low flows.

2c. Fish – Trevor Conder, NOAA

For adults, Trevor shared that spring Chinook adults are increasing. Almost 3,000 adults have passed Bonneville (about 300 per day right now). At McNary, 779 spring Chinook have passed to date. At Ice Harbor, 320 have passed. As typical, they are stacking up below Lower Monumental in the Snake River. There was a zero passage day on April 18. Only 3 passed yesterday. The Little Goose powerhouse is shut down and passing 5 kcfs for line work related to the roof repair. That appears to be slowing fish down. Outages will continue through the week and this will cause somewhat of a bottleneck at the project.

For juveniles, yearling Chinook are increasing. At Lower Granite, the index yesterday (April 19) was 18,890. At Bonneville, it was 12,571. Subyearling Chinook had an early bump in early April and are on the decline. In June, they will likely increase again. Steelhead are passing consistently but not in as high numbers as juvenile Chinook.

Dave Swank, USFWS, updated the group on lamprey passage. No adults have been observed since this is not the right time of year, however, juvenile counts at McNary and Bonneville were high about two weeks ago. They have since dropped off. Swank noted that the higher counts were probably due to higher flow events. He added that juveniles typically have a more spread-out migration season.

2d. Power – Tony Norris, BPA

Tony noted that weather systems coming in have resulted in variable energy resources. He showed the group a graph of deployed reserves. Van Dyke asked some questions about reserves. Tony said the best way to address the questions would be to bring additional BPA staff to a process meeting.

BPA has been able to achieve the 8-hour performance spill blocks in the morning at Lower Granite and Lower Monumental. Little Goose has had powerhouse outages that precluded the ability to reduce spill for the 8-hour block. He highlighted that on April 13-14, BPA was able to achieve the 8-hour performance standard block of 30% spill and that the river flow was reduced by 8 kcfs on non-performance standard spill hours when the project was at minimum generation, spill the rest to fill the pool. At Lower Monumental, the 8-hour morning spill blocks were only missed when there was not enough water. Ice Harbor, McNary, and Bonneville have been at minimum generation, spill the rest. John Day has been achieving the 8 hours of performance spill. The Dalles is hitting the FOP target of 40% spill.

Today’s Attendees:

| Agency | TMT Representative |
|---------------------------------|--------------------------------|
| Army Corps of Engineers | Doug Baus (Chair), Lisa Wright |
| Bonneville Power Administration | Tony Norris |
| Bureau of Reclamation | Joel Fenolio, Chris Runyan |
| NOAA Fisheries | Trevor Conder, Kelsey Swieca |
| US Fish & Wildlife Service | Dave Swank |
| Washington | Charles Morrill |
| Oregon | Erick Van Dyke |
| Idaho | Jonathan Ebel |
| Montana | Brian Marotz |
| Nez Perce Tribe | Jay Hesse |
| Umatilla Tribe/CRITFC | Tom Lorz |
| Colville Tribe | |
| Warm Springs Tribe | |
| Kootenai Tribe | |
| Spokane Tribe | |

Other Attendees (non-TMT members):

Corps – Alexis Mills, Aaron Marshall, Scott St. John, Leon Basdekas, Dan Turner, Michelle Yuen, Eric Chow, Ashlynn Tate
 Yakama Nation Fisheries – Tom Iverson
 DS Consulting – Emily Stranz (Facilitator), Nancy Pionk
 BPA – Melissa Haskin (CONTR, FLUX Resources, Notetaker)
 Chelan PUD – Jay Finch, Kate von Reis Baron
 Douglas PUD – Andrew Garrett
 Snohomish PUD – Bryan Zigler
 Portland General Electric – Ruth Burriss