

COLUMBIA RIVER TECHNICAL MANAGEMENT TEAM

May 22, 2019

DRAFT Facilitator's Summary

Facilitator: Emily Stranz; Notes: Colby Mills, 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. These notes are not intended to be the "record" of the meeting, only a reminder for TMT members. Official minutes can be found on the TMT website: <http://www.nwdwc.usace.army.mil/tmt/agendas/2019/>.

Dworshak Operations

Jon Roberts, Corps NWW, provided an update on operations at Dworshak Dam. Total outflow is currently 6.2 kcfs and the project is generating at 4.2 kcfs and spilling 2 kcfs. Forebay elevation is 1,593.15 feet, which is less than 7 feet from full. Inflows peaked at 31 kcfs on May 18, and have since receded to 17.64 kcfs as of this morning. Forecasts show a continued decrease to 14 kcfs in the next few days. Forecasts show a similar decline in flows in the Clearwater River at Orofino, down to 31-32 kcfs over the next 5-6 days. The 10-day QPF shows just over an inch of rainfall throughout the basin, and the project will continue to move water to meet flood control requirements and manage inflow.

TDG is currently at 103.9% and is expected to climb to 106%-108% by midday as temperatures rise. The project plans to do what they can to manage inflows, while limiting TDG. Jon noted that they plan to continue with 6,200-6,400 cfs discharge until unit 3 becomes available. Once unit 3 is back online, they will ramp up to full powerhouse and spill approximately 4,000-4,500 cfs for a total discharge of around 14,000 cfs. He noted that the Corps will try to minimize the TDG and keep it as low as possible. Jay Hesse, Nez Perce, reported that as a result of higher TDG in the tailrace there is elevated gas on fish at the Dworshak Hatchery; he appreciated the Corps' efforts to get back down towards 100% and limit the duration of the spill. Idaho hatcheries also appreciated the communication efforts by the Corps' and are not affected by this rise in TDG.

[NOTE: by the end of the meeting, Jon was able to provide an update on the unit outage. He shared that the project will be testing unit 3 today at 11 am and if testing is successful, the unit will stay on and the project will be able to decrease spill and thus TDG.]

FOP Spring Spill

Dan Turner, Corps NWD, reported that TDG levels were are 120% on the Snake River, although there was some involuntary spill throughout the system as a result of higher flows, which caused some TDG exceedances. He noted that Lower Monumental Dam had issues with a lag in project flow and total spill data Saturday through Monday, which has hampered efforts to manage spill caps. On the Columbia River, John Day and The Dalles dams continue to operate with the goal of meeting 120% TDG in each tailwater, with maintaining at least 40% or greater spill cap at The Dalles. The Corps is working to meet all three of the goals when possible, however, 120% in The Dalles tailwater and at least 40% spill at The Dalles are the priorities if they cannot meet all three goals. He reiterated that TDG in The Dalles tailwater is driven by environmental conditions. On May 20, John Day had involuntary spill that bumped TDG levels up to 122%.

An error was identified in the incoming USGS data at The Dalles tailwater gauge. Air pressure was reporting at 1% higher than it should have been, which caused the calculated percent TDG to be 1% less (indicating it was underreporting TDG). Effects of that error go back to 2015; the Corps has corrected the real-time data as of May 14 and is discussing how to correct the historic data. The Corps will document this issue in the monthly FOP report and annual TDG report. Dan also noted that the telemetry equipment at Cascade Island was temporarily removed on May 16 in anticipation of high flows, it has since been reinstalled.

Tony Norris, BPA, reported that the period of high flows resulted in gas cap exceedance, and flexible spill operations were available at most projects.

Little Goose Dam Operations

Doug Baus, Corps NWD, updated the group on some concerns over adult Chinook passage counts at Little Goose Dam, specifically 183 on May 18, which was significantly down from 1,052 the previous day. The year to date count at Little Goose Dam as of 5/21 is 8,742, and as of 5/20 the YTD count was 12,226 at Lower Monumental Dam.

The group consulted the DART passage tool, which showed black dots, indicating potential delay at Little Goose on the 16, 17, and 18 of May. From the Corps perspective, the potential delay was likely due to high spill, which has historically delayed adult passage. On May 18, the 24-hour average spill was 43.6% spill. The project was not able to achieve the performance standard spill operation of 30% due to high flows and was in involuntary spill throughout the day. On May 19, while the 24-hour average spill was 141.5 kcfs, the project could only operate to 30% for three hours in the evening, at 1700, 1800, and 1900 hours.

The Corps noted that in years past, filling into the forebay has been used to keep spill at 30% to aide passage; this would be outside of the parameters of the flex spill agreement, thus the Corps would need regional consensus to do so. The Corps recommended that the region consider this tool, as current inflow forecasts show the same problematic flow level in the near future.

Paul Wagner, NOAA, clarified that the flex spill agreement allows a 5 AM hours/3 PM hours operation (as opposed to 4 AM /4 PM) which was implemented yesterday. Multiple Salmon Managers noted that the 5/3 tool was a well thought out operation to address passage delay at Little Goose; they encouraged the AAs to use it when it seemed necessary for passage. There doesn't need to be in-season consensus or discussion on it. BPA noted that currently scheduling the 5/3 or 4/4 is left up to BPA for power flexibility and it is helpful for their internal planning purposes to have Salmon Managers' help communicate when there is a need to use this tool (5/3) to help pass adults.

Salmon Mangers requested the AAs use the 5/3 tool as much as flows allow over the holiday weekend or until the delay is resolved, noting that the data show the operation seems to be helping. Salmon Managers also noted that they appreciated the communication efforts on behalf of the Corps and BPA in coordinating this operation earlier in the week.

Moving forward, any suggestions from FPAC regarding flex spill operations at Little Goose will be funneled through the FPAC chair to the Corps, the Corps will provide a response and the chair will inform FPAC.

- **ACTION:** If there is concern on Friday (5/24) from Salmon Managers regarding Little Goose adult passage, they will contact Paul before 12:00 pm who will in turn contact BPA and the Corps for coordination.
- **ACTION:** The Corps will move forward into the weekend implementing the 5/3 at Little Goose Dam, when feasible, through Monday, May 27. The issue will be revisited at the next meeting on May 29.

The next scheduled TMT meeting is face-to-face meeting on Wednesday, May 29, 2019, at 1:00 PM.
This summary is respectfully submitted by the DS Consulting Facilitation Team. Suggested edits are welcome and can be sent to Colby at colby@dsconsult.co.

Columbia River Regional Forum
Technical Management Team OFFICIAL MINUTES
May 22, 2019
Minutes: Melissa Haskin, FLUX Resources

1. Welcome and Introductions

Today's TMT meeting was chaired by Doug Baus, Corps, and facilitated by Emily Stranz, DS Consulting. See the end of these minutes for a list of today's attendees.

2. Dworshak Operations – Jon Roberts, Corps NWW

Jon Roberts, Corps, reported on operations at Dworshak Dam. Midnight elevation was 1,593.15 ft., about 7 ft. from full. Inflows are 17.64 kcfs, outflows are 6.2 kcfs and TDG is 103.9%. The Corps expects this to climb as high as 108% today. Due to the rise in TDG, the plan is not to make any operational changes but to continue with 6.2 to 6.4 kcfs outflows until Unit 3 comes back online. At that time, the Corps will move to full powerhouse, spilling 4-4.5 kcfs for a total discharge of 14 kcfs. The Corps will adjust from there based on inflows to keep TDG below 110%. [NOTE: later in the meeting, Roberts provided an update that Unit 3 will begin testing at 3 p.m. today. If that Unit goes through testing correctly, it will be left on and start generating today (it was initially scheduled to be back online Friday). Spill has been stopped at the project, which should drop TDG under 100%. The project will not spill during testing.]

Inflows peaked at 31 kcfs on May 18. Right now inflows are receding and the Corps expects this to drop as low as 14 kcfs in the next several days. The forecast for the Clearwater River at Orofino shows a similar decline with flows falling to 31-32 kcfs over the next 5-6 days.

The 10-day weather forecast shows about an inch of rain in the Clearwater Basin. The Corps will continue to move water to meet the FRM requirements.

Jay Hesse, Nez Perce, asked if the Corps would be drafting the reservoir. Roberts said the Corps would need to draft to get to 1,595 ft. for the end of the month FRM target if the reservoir fills above that. However, the Corps will back off spill if at all possible, depending on flows. Hesse noted that it would be in the best interest of the Nez Perce hatcheries if the Corps could limit the duration of the spill and keep TDG under 100%.

Russ Kiefer, ID, noted that the Idaho hatchery gets its water from the reservoir and not the tailrace of Dworshak Dam so the fish in the hatchery are not affected by the spill and TDG. He expressed concern for natural fish in the river below the project. His advice to the Corps would be to consult both Hesse and Dave Swank, USFWS, since their agencies' hatcheries would be more directly impacted by TDG.

3. FOP Spring Spill

3a. Spill & TDG – Dan Turner, Corps NWD

Dan Turner, Corps, reported on spring spill. There has been some involuntary spill and TDG exceedances over the last week. There have been a few data issues at Lower Monumental, which has hindered the Corp's ability to set spill caps at that project (Saturday-Monday). The Corps is trying to resolve the issue but data are lagged 8-12 hours, which means the Corps cannot be as reactive.

On the Columbia, per last week's TMT, the goal is to operate John Day and The Dalles in tandem to achieve three objectives:

1. 120% TDG in The Dalles tailwater;
2. Spill cap of at least 40% at The Dalles;

And, if possible,

3. 120% TDG in the John Day tailwater.

The John Day tailrace hit 122% TDG on 5/20 due to involuntary spill.

Turner reported on a data error at The Dalles tailrace gauge (TDDO) that was discovered last Wednesday. Since 2015, air pressure at the gauge has been reporting 1% higher than actual air pressure, which skewed the calculated TDG value 1% lower (i.e., TDG was being under-reported by 1%). The Corps corrected the error on May 14 and real-time data since then have been correct. The Corps is working on correcting historic data. This will be documented in the monthly FOP report as well as the annual TDG report.

At Bonneville, the Corps and USGS decided on Thursday to remove the Bonneville tailrace gauge at Cascade Island. Flows were forecasted to be high, which limits access and can result in the gauge getting damaged and/or washing out. The Corps reinstalled the equipment on 5/21 and real-time data began to come in again at 1200. The flow threshold for removing the gauge is around 380-400 kcfs.

3b. Flexible Spill Implementation – Tony Norris, BPA

Tony Norris, BPA, reported on flex hours. Over the last 4-5 days, there have been high flows that resulted in gas cap exceedances and limited opportunities for flex spill.

4. Little Goose Dam Operations – Doug Baus, Corps NWD, and Paul Wagner, NOAA

Doug Baus, Corps, reported that salmon managers have been in contact with the Corps and BPA regarding adult salmon counts at Little Goose Dam that indicate a passage delay. On Saturday, May 18, Chinook counts were 183, which caught the attention of some salmon managers. On the previous day, counts were significantly higher at 1,052.

At Lower Monumental, the YTD count for Chinook adults is 12,226 (not including May 21) compared to Little Goose where the YTD count for Chinook is 8,742 (including May 21).

The DART tool is showing three black dots – indicators of delay. Previously, counts indicated that passage may be later than normal but had not reached the threshold for delay.

As discussed at previous TMT meetings, there is a correlation between high spill at Little Goose and adult passage delay, said Baus. On days passage was decreased, such as on May 18, flows were high and the 30% performance spill was not possible. In past years, when adult delay was observed during high flows, TMT coordinated an operation to maintain spill at 30% for a block of hours in the morning by allowing the pool to fill above MOP then drafting that water back out overnight. Baus reminded TMT that this is a tool that could be used this year if there is consensus recommendation from salmon managers to do so. If not, the Corps will continue to implement the flex spill agreement which calls for operating within the MOP range (i.e., there would be no flexibility to maintain spill at 30% during high flows). The Corps does not plan to change operations but wanted to share the tool since it has helped with delay during high flows in the past.

The inflow forecast for the next few days is similar to that of May 18 and May 19 so there is a likelihood that 30% spill will not be achievable.

Paul Wagner, NOAA, said that the flex spill agreement allows for the 8 hours of 30% spill to be split into 4 AM/4 PM or 5 AM/3 PM. He noted that the Corps and BPA implemented the 5/3 yesterday and asked if they could continue that without a consensus recommendation from the salmon managers.

Kiefer said he noticed indications of adult delay on Monday and saw that the flow forecast indicated that flex spill could be implemented in the morning. He sent an email to the Corps and BPA requesting that they implement the 5/3 operation until the delay was resolved. He appreciated that the agencies implemented his request on Tuesday. His position, based on the flow forecast, regardless of its uncertainty, is that he hopes 30% spill for 5 hours in the morning will resolve the issue.

Swank agreed that the Corps and BPA should implement the 5 hours of 30% spill in the morning. He hears the Corps' concern for adult delay with the forecasted increase in flows. He would like to see a threshold level set that would shift the 30% spill to a 5/3 operation.

Julie Ammann, Corps, asked if fish are passing during the 3 hours of 30% in the afternoon. She wondered if a continuous block of 8 hours in the morning would be better for adult passage. She mentioned that the tools that have been used in the past are: 1) reducing spill intentionally to 30%, and 2) using the pool to fill above MOP if necessary to hold spill at 30% during higher flows. With the holiday weekend approaching as well as the possibility of high flows and involuntary spill, she wondered if it would be prudent to pre-coordinate an operation.

Wagner responded that based on the DART tool, it does look like the hours of entry peak in the morning around 8 am. As spill picks up in the afternoon, passage drops. In the late afternoon, there is another passage peak. The pattern suggests that fish respond to 30% spill, he said, so an 8-hour block would likely result in more passage in that period.

Scott Bettin, BPA, added that it can be difficult to implement same-day operations on a Monday so it would be helpful to know ahead of time if there is a request to change operations. He also noted that it will be hard to say exactly what turbine capacity will be since that depends on if the screens will need to be cleaned due to the high flows. He added that while BPA does have the flexibility to implement the 30% spill as a 4/4 or 5/3 operation, it is a balance between fish and power and BPA would prefer to have guidance from salmon managers if that flexibility is going to be reduced to a 5/3 operation only.

Charles Morrill, WA, noted that FPC also has a conversion tracking tool that would provide additional information for making a decision. Baus mentioned that last year's link to the FPC tool is not working. Erin Cooper from FPC noted that the link is available on the FPC website under the "Adult" tab, "Passage Indicator." The page may take a while to load.

Erick Van Dyke, OR, gave his opinion that the operation is not within the flex spill agreement. He noted that while some people see black dots as an indicator to make an immediate change, total river flow is also key to delay. OR is not supportive of changing operations as set out in the flex spill agreement. He thinks the agencies should be observing and learning what the agreement does.

Bettin wondered if the Spill Agreement technical group looked at conditions that matched current conditions. Hesse responded no, they were not looking to manage involuntary spill.

Hesse said he understands there is flexibility in the agreement to do 30% spill as 4/4 or 5/3 and appreciates that the Corps and BPA reached out to salmon managers for their feedback and expertise on how to best manage that for fish. In his mind, 5/3 was the default for spring spill and he thinks they may not have done a great job expressing that in the agreement.

Morrill echoed Hesse's appreciation about the Corps and BPA reaching out before implementing the request for a 5/3 operation on Tuesday.

Tom Lorz, Umatilla/CRITFC, said his preference is to run 5/3 until Monday if possible. In the future, he requested that the Corps and BPA coordinate with all salmon managers to make this change. He said no one had reached out to him on Monday. Bettin replied that they called the FPAC chair. Lorz added that the Corps and BPA should be able to track the black dots on their own and make the change if necessary since it's already built into the agreement.

Kiefer followed up that the Corps and BPA can switch between a 4/4 and 5/3 operation at any time. If a TMT member does not agree with this flexibility in the agreement, then that representative should elevate the issue to the policy-level to amend the agreement.

Baus asked for a consensus recommendation from Salmon Managers if the request is to make the switch to just do the 5/3 operation (no flexibility to do 4/4) as a way to help adult fish. He pointed out that it can be difficult to make a decision based on DART alone when some TMT members have pointed out that DART is not the only tool for tracking fish passage and there are different opinions among salmon managers of when delay is a problem.

Bettin reminded TMT that the flexible hours (4/4 or 5/3) are also there for power flexibility.

Lorz encouraged the Corps and BPA to make a decision on their own and did not understand why they were seeking permission from TMT.

To streamline future coordination of requests for flex hours to address delay, Ammann proposed that salmon managers route the request through the FPAC Chair who will coordinate the request with the Corps and BPA and then update FPAC with the decision. Salmon managers agreed this would be an acceptable path forward.

Going forward, the Corps and BPA will continue to implement the request to spill 30% as a 5/3 operation through Monday as flows allow. If flows are too high during those hours, spill will be above 30%.

Bettin mentioned that the forebay makes a difference right now and could be used to store high flows in order to maintain 30% spill.

Wagner will contact the Corps and BPA if an unscheduled TMT is required before next Wednesday.

5. Next TMT.

Face-to-face meeting on Wednesday, May 29 at **1pm** (later time to avoid conflict with CSS CRSO meeting). [NOTE: TMT reconvened for an unscheduled conference call on Friday, May 24 at 1pm].

Today's Attendees:

Agency	TMT Representative
Army Corps of Engineers	Doug Baus (Chair), Julie Ammann, Lisa Wright
Bonneville Power Administration	Tony Norris, Scott Bettin
Bureau of Reclamation	Joel Fenolio
NOAA Fisheries	Paul Wagner
US Fish & Wildlife Service	Dave Swank
Washington	Charles Morrill
Oregon	Erick Van Dyke
Idaho	Russ Kiefer
Montana	Jim Litchfield
Nez Perce Tribe	Jay Hesse
Umatilla Tribe/CRITFC	Tom Lorz
Colville Tribe	Sheri Sears
Warm Springs Tribe	N/A
Kootenai Tribe	N/A
Spokane Tribe	N/A

Other Attendees (non-TMT members):

Army Corps of Engineers – Dan Turner, Jon Roberts, Ann Setter, Alfredo Rodriguez
DS Consulting – Emily Stranz (Facilitator), Colby Mills
FLUX Resources – Melissa Haskin (Note taker)
Oregon DEQ – Paula Calvert
Clearing Up – K.C. Mehaffey