

**COLUMBIA RIVER TECHNICAL MANAGEMENT TEAM**

August 9, 2017

Facilitator's Summary

Facilitator: Emily Stranz; Notes: Charles Wiggins, 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.nwd-wc.usace.army.mil/tmt/agendas/2017/>*

**Dworshak Operations**

Steve Hall, Corps, summarized operations at Dworshak. Reservoir elevation is currently at 1,562 feet, with inflows ranging between 1.7-1.8 kcfs, and around 11 kcfs outflow. TDG is ranging from 119.5 to 120% at the dam and from 102.9 to 103.4 in the hatchery collection channel. Snake River water temperatures are also varying slightly, with highs as high as 70 degrees in the Lower Granite Dam tailwater, however, cooling in the evenings. The air temperature forecast at Lewiston continues in the upper 90's until Sunday, when temperatures will drop.

The Corps developed three model scenarios simulating the impact of Dworshak Dam outflows on water temperatures in the Lower Granite tailrace. In the three model runs, on August 12 or 13, the current Dworshak Dam outflow would 1) continue at 11 kcfs, 2) be lowered to 10 kcfs, or 3) lowered to 9 kcfs. The models predicted there would be little difference between water temperatures at these outflow rates. It was noted that if the project is operated at 11 kcfs through August, the reservoir will be drafted deeper than the end of August elevation of 1,535 feet described in the NOAA Fisheries Biological Opinion.

Steve's recommendation was to drop Dworshak outflow to a flat 10 kcfs until water temperatures in the Lower Granite tailwater are comfortably below 68 degrees F, then reassess at next TMT and reduce to 9 kcfs if possible. This would provide a water temperature buffer in case the ambient temperatures remain high. Paul Wagner, NOAA, reported that some at FPAC preferred to go to 10 kcfs sooner, both to provide some relief at the hatchery and so as not to run out of water later. Dave Swank, USFWS, reported that fish are doing reasonably well at the hatchery, considering the prolonged exposure to high TDG levels. The fish are showing some gas bubble in the gills of both steelhead and Coho, and in the lateral lines of the Coho, however, they are not seeing elevated mortality. He noted that the hatchery would appreciate relief and are comfortable dropping to 10 kcfs now, with the hope of dropping down to 9 kcfs the following week. Russ Kiefer, ID, noted that most adult sockeye have passed Lower Granite Dam and are appearing in the Salmon River basin. After the discussion, TMT agreed by consensus to the following:

- **ACTION:** The TMT agreed to reduce discharge at Dworshak to a flat 10 kcfs at midnight on Friday, August 11, and to continue at that rate until the next scheduled TMT, on Wednesday August 16. TMT will then reassess and consider another reduction to 9 kcfs.

**Special Operations Request from the Port of Clarkston.**

Wanda Keefer, Port Manager of the Port of Clarkston, presented on SOR 2017-2. The request was as follows: raise the Lower Granite pool from Minimum Operating Pool (MOP) range (733.0 to 734.0 feet) to MOP + 1 (734.0 to 735.0 feet) and hold for the 11-hour period from 0600 August 15, 2017 to 1700 August 15, 2017 before resuming normal MOP operations. Wanda noted that the request is due to the need to dock a tourist cruise ship; the cruise industry plays a vital role in the local economy. Due to heavy sediment deposition last winter, some boats cannot dock in their normal location with the Lower Granite pool in MOP. The Port is exploring longer term options, including potentially dredging. Jay Hesse, Nez Perce, requested that the tribe is included in conversations regarding dredging, as they are concerned with impact on lamprey.

Doug reminded TMT that both the BiOp and the Fish Operations Plan allow for adjustments to MOP for navigation. The Action Agencies operate the Lower Granite Dam forebay at MOP which is defined as the minimum 1 foot operating range in the forebay (733.0-734.0 feet) from April 3 through August 31 as described in the BiOp. Outside these dates, Lower Granite Dam operates with its normal 5 foot forebay operating range between 733-738 feet.

Doug also noted that at 0600 today, outflow was 28.9 kcfs, with 14 kcfs passing through Unit 5 and 14.7 kcfs spill. Yesterday's average outflow was 32.6 kcfs, with 14.1 kcfs generation and 18.1 kcfs spill. The 10-day forecast calls for a gradual decrease in the hydrograph. Inflow levels are more difficult to predict, as they are dependent on Idaho Power's upriver operations. Tony Norris, BPA, observed that because Lower Granite is at "minimum generation, spill the rest," the pool could be raised or lowered one foot in a day by adjusting the spill rate by about 5 kcfs, with a more gradual spill rate possible in both directions if operators had additional time. It is expected that these changes would have little effect on temperature and stratification downstream.

Salmon Managers stressed that despite recorded smolt passage numbers (which appear low due to limited sampling and detection through turbines), there are still juvenile fish migrating in the system. Jay Hesse and Erick Van Dyke, OR, emphasized that fish use the pool for many purposes during the entire year and a bump in passage is expected in the coming month.

It was noted that the project is limited to unit 5 or 6 due to a unit 3 outage. Erick was concerned about the unit priorities, noting that the preference would be to use unit 3. The unit limitation changes the impact of this operation in a negative way. Tony noted that regardless of what unit is used, spills may be below BiOp spill levels (18 kcfs) and that the sooner a decision is made on the SOR, the lesser the impact can be on daily spill. Doug suggested that the conversation on unit priorities is raised for conversation at FPOM on Thursday.

Fish Managers identified concerns regarding the SOR:

- Minimize spill impacts – the bypass routes are not in operation, thus spillway passage needs to be maintained. Conduct a "spill neutral" operation.
- Do not extend or prolong the elevated pool levels as it impacts downstream velocity and passage.
- Do not go above minimum generation to release the stored water.

Extensive conversation followed. At its end, the following proposal was put forward for TMT consideration:

**On Saturday, August 12, begin filling the Lower Granite Dam forebay at a gradual rate to attain a Lower Granite Dam MOP +1 operation for the hours described in the SOR (0600 hours, Monday, August 15 to 1700 hours, Monday, August 15). After the operation described in the SOR is complete then draft the Lower Granite Dam forebay to MOP by Friday, August 1718. This operation would be assuming use of unit 5 or 6 and would not exceed minimum generation while releasing the water.**

TMT members were polled on the SOR; there were no objections: BPA (no objection), BOR (no objection), Colville (no objection), ID (support), MT (support), Nez Perce (no objection), NOAA (support), Umatilla (no objection), and USFWS (no objection). All Salmon Managers requested a spill neutral operation. OR needed more time to consider the request and agreed to provide their response by the end of business today. In case it is needed, an unscheduled TMT meeting was planned for Thursday, August 10, at 1 PM, subject to cancellation [this meeting was cancelled as it was not necessary].

*[Facilitator's Note: Before the close of business on August 9<sup>th</sup>, Oregon provided a response to the TMT poll*

*via email. In his email, Erick Van Dyke noted that Oregon is abstaining from the poll regarding SOR 2017-2.]*

In case it is needed, an unscheduled TMT meeting was planned for Thursday, August 10, at 1 PM, subject to cancellation [this meeting was cancelled as it was not necessary].

**The next regular TMT meeting will be face-to-face meeting on August 16, at 9:00.**

**Columbia River Regional Forum  
TECHNICAL MANAGEMENT TEAM OFFICIAL MINUTES**

**August 9, 2017**

Minutes: Pat Vivian

**1. Introduction**

Representatives of Montana, Washington, Idaho, Umatilla and Nez Perce tribes, BOR, USFWS, NOAA, COE, BPA, Yakama and Colville tribes, and others participated in today's TMT conference call chaired by Doug Baus, COE, and facilitated by Emily Plummer, DSC.

**2. Dworshak Operations**

**2a. Current Operations Data.** Steve Hall reported. Dworshak reservoir has drafted down to 1562 ft elevation, with inflows of 1.7-1.8 kcfs and discharges of 11 kcfs.

**2b. TDG in Dworshak Tailrace.** In the past few days TDG levels in the tailrace have ranged from 118.8 to nearly 120% saturation.

**2c. TDG in Dworshak Hatchery.** Current TDG levels in the tailrace are producing 102.9-103.4% saturation in the hatchery collection channel.

**2d. Hourly Snake and Clearwater River Temperatures.** Current water temperatures are 69-70 degrees F in the afternoon, cooling in the evening.

**2e. Model Scenarios – 11 to 9 kcfs; 11 to 10 kcfs; and 11 kcfs.** Hall showed TMT three modeled scenarios linked to today's agenda. The first option is a transition to 9 kcfs on August 12, when the model indicates that Lower Granite tailrace temperatures will drop to 68 degrees F. The 10 day forecast indicates a cooling trend with some precipitation.

**2f. Model Scenarios –11 to 10 kcfs.** The second scenario has discharges drop to 10 kcfs on August 13 when the model indicates Lower Granite tailrace will reach 68 degrees F.

**2g. Model Scenarios –11 kcfs.** The final model scenario holds 11 kcfs which drops the Lower Granite tailwater temperature below the 68 degrees F mark in future.

If Dworshak drafts to 1535 ft from August 12 to the end of August, outflows would need to be reduced to about 9.9 kcfs, based on STP inflow projections. The longer Dworshak discharges 11 kcfs, the lower releases will eventually go. There isn't enough water to draft 11 kcfs through August 30.

**2h. Weather Forecast for Lewiston, ID.** Through August 11, the forecast shows temperatures remaining around 100 degrees F and cooling to 70 degrees at night.

Of the three options, Hall favored dropping DWR outflows to 10 kcfs on August 12 until Lower Granite tailwater temperatures are below the 68 degrees F mark. This would be followed by dropping to 9 kcfs outflows if temperatures allow to preserve water in case another heat wave hits.

Paul Wagner, **NOAA**, said FPAC talked about this yesterday, but didn't make a recommendation due to lack of current data. Wagner shared Hall's preference for dropping discharges from 11 to 10 kcfs.

Dave Swank, **USFWS**, supported dropping DWR discharges to 10 kcfs this week. He proposed dropping to 9 kcfs next week if weather allows to provide relief for hatchery fish exposed to high TDG levels for weeks. Health wise, the fish are doing reasonably well despite bubbles in the gills and lateral lines. They are feeding normally, with no elevated mortality.

Several other Salmon Managers supported Swank's proposal. Based on an IDFG update this morning, Russ Kiefer, **Idaho**, was confident the Snake River sockeye run has passed Lower Granite, so dropping DWR discharges to 10 kcfs on August 12, then 9 kcfs if weather allows, is a good plan. Jay Hesse, **Nez Perce Tribe**; Charles Morrill, **Washington**; Tom Lorz, **Umatilla**; and Sheri Sears, **Colville Tribe**, all agreed that DWR outflows should drop to 10 kcfs, then 9 kcfs if temperatures allow. Erick Van Dyke, **Oregon**, saw no reason to recommend otherwise. Tony Norris and Mary Mellema said **BPA** and the **BOR** would defer to the COE in this.

Accordingly, the COE will start ramping Dworshak down to 10 kcfs flat flows starting at midnight August 11. TMT will decide next week whether conditions allow Dworshak to ramp down to 9 kcfs to save water.

### **3. Lower Granite Dam Minimum Operating Pool**

**3a. SOR 2017-2 from Port of Clarkston.** This SOR was not available to FPAC to discuss yesterday, so the information was new to TMT today.

Wanda Keefer, Port of Clarkson (Port), presented the justification for System Operational Request (SOR) 2017-2, which requests that Lower Granite operate at Minimum Operating Pool (MOP) +1 (734-735 feet elevation) for 11 hours, from 6 am on August 15 to 5 pm on August 15, then resume normal MOP (733 – 734 feet) operations. Due to accumulation of debris and sediment during high flows this spring, the extra foot of water is needed to allow docking of a cruise ship at the Port's commercial dock on August 15. Debris and

sediment have accumulated because the dock is located on a 90 degree turn where the Clearwater joins the Snake. Attachment 1 to this item on today's agenda shows a road in the area that washed out in the deluge of spring 2017. Significant erosion events like this that occurred this spring likely contributed to sedimentation within the Port.

The Port has considered other options for docking on August 15, such as the Ports of Lewiston and Whitman County, but no alternatives are available. As for next steps, the Port of Clarkston will begin in September to assess this area and release relevant data within a month or two. Sediment dredging is an alternative being considered.

The Nez Perce are concerned about the potential effects of dredging operations on lamprey, Hesse said. He asked whether the Port envisions making additional requests of this nature for August 15-September 1. Keefer said no, this request is limited to August 15.

Beginning September 1, the normal forebay operating range for Lower Granite Dam is 5 feet (733-738 feet), Baus noted. Under the BiOp, it shifts to MOP which is the lowest a 1 foot operating range (733-734 feet) in the forebay during fish migration season (April 3 through August 31). Once Lower Granite Dam returns to its normal 5 foot operating range, the COE will be able to facilitate special pool operations for navigation.

**3b. Attachment A.** Baus reviewed fish passage data linked to today's agenda. Subyearling passage is winding down at Lower Granite. The index counts at Little Goose yesterday was 784; the run is nearing its end. Adult steelhead passage is in progress at BON, but it's still early in the year at Lower Granite relative to the 10 year average. Chinook are between summer and fall runs at Lower Granite. Fall chinook passage will start ramping up in September.

Hesse characterized juvenile passage as being in a lull rather than over for the year, with 1,000 fish/day passing Lower Granite before the bypass was shut down. The project is still likely passing 1,000 juveniles a day. Erick Van Dyke, Oregon, and Charles Morrill, Washington, agreed with Hesse's characterization.

Wagner asked, what is the effect on flows of going to MOP? At 0600 hours today, Lower Granite outflow is 28.9 kcfs, with spill of 14.7 kcfs and generation of 14 kcfs, Baus replied. The forebay elevation is currently within its MOP range of 733-734 ft. Yesterday's daily average outflow was 32.6 kcfs with generation flow of 14.1 kcfs and spilling 18.1 kcfs. The 10 day outlook shows a gradually decreasing hydrograph. The significant changes in the Lower Granite Dam inflow forecast are the result of the significant swings of 5-15 kcfs in Idaho Power releases from Brownlee. As previously coordinated in TMT and as

described in the Fish Operations Plan it is challenging to operate the Lower Snake River this time of year and achieve all the various objectives (BiOp, navigation, hydropower, etc.) during low flow conditions.

Hesse asked, how will spill and powerhouse flows be affected by implementing the SOR? Currently Lower Granite Dam minimum generation is approximately 14 kcfs, Baus said. Hesse asked whether the operation risks upsetting stratification in the reservoir; Hall said no.

Because this is a critical time when even slight changes can affect planned spill operations, the SOR should be implemented as a spill-neutral operation, with flows at Granite reaching the point when minimum generation requirements come into play, Kiefer said. Others agreed.

The SOR involves shifting unit priorities at Granite from units 5 and 6 to unit 3, which complicates the discussion because two separate issues are now involved, Van Dyke said. FPOM is scheduled to discuss unit priorities tomorrow, Baus noted.

Lower Granite would still be on minimum generation if all units were available, spilling well below its 18 kcfs BiOp objective, Norris said. The sooner a decision is made to decrease spill to get to MOP+1 range, the less it will impact spill. The only way to ensure spill neutrality is not to exceed minimum generation in releasing stored water. If Idaho Power releases more than planned from Brownlee, it could affect the timing.

**3c. Caucus and Polling.** After a brief Action Agency caucus, TMT reconvened. Norris proposed the following.

1. On Tuesday, August 15 from 0600 to 1700 hours operate the Lower Granite Dam forebay within the range of MOP +1 (734-735 feet) for the operation described in the SOR.
2. In order to minimize any impacts on spill in order to achieve the MOP +1 operation described above begin the operation to increase the forebay elevation on Saturday, August 12 (3 days prior).
3. In order to minimize any impact on spill when returning to MOP after the MOP +1 operation ends on Tuesday, August 15 at 1700 hours draft the Lower Granite Dam back to MOP by Friday, August 18 (3 days after).

The project is currently limited to units 5 and 6 due to difficulties with screen removal from unit 3 for the JBS upgrade, Ann Setter, COE, reported. The COE noted current low flow conditions as described in the Fish Operations Plan during result in a single unit operation at minimum generation and then the project spills the remainder inflow and this may or may not result in 18 kcfs spill at Lower Granite Dam.

At this point TMT members were polled on whether to implement the SOR, with the choices being support, no objection, objection, or abstain.

- **NOAA** – There will be uncertainty regarding spill neutrality. Supports the SOR and hopes there are no further requests of this nature.
- **Washington** – No objection. Supports the Action Agencies’ efforts to achieve spill neutrality. Suggested Dworshak water might be used to accomplish that goal.
- **Colville** – No objection. Supports the Action Agencies’ efforts to achieve spill neutrality.
- **Umatilla** – No objection. Supports the Action Agencies’ efforts to achieve spill neutrality. Shares NOAA’s hope for no further requests of this nature.
- **USFWS** – No objection. Supports the Action Agencies’ efforts to achieve spill neutrality. Shares Nez Perce concerns about the potential impacts of dredging on lamprey.
- **Idaho** – Supports the SOR. Because this is a critical time when even slight changes can affect planned spill operations, the SOR should be implemented as a spill-neutral operation, with flows at Granite reaching the point when minimum generation requirements come into play.
- **Montana** – Supports the SOR.
- **Nez Perce** – No objection, although the SOR lacks implementation details the tribe would like to see. Spill neutrality is important because the juvenile bypass is out of service.
- **BPA** – Will implement what the COE decides. At least three days are needed on either side of August 15 to meet objectives at Lower Granite.
- **Oregon** – Abstained from voting due to concerns about the impacts of unit priority on juvenile passage. In today’s meeting, stated no official position and agreed to establish one via an email to all TMT members before close of business today.

### ***3 Next TMT Meeting***

With Oregon not stating a position in the meeting and time being of the essence, TMT scheduled a tentative conference call for 1 pm August 10

(canceled when Oregon abstained via email). The next regular TMT meeting will be in person on August 16.

<b><i>Name</i></b>	<b><i>Affiliation</i></b>
Jim Litchfield	Montana
Charles Morrill	Washington
Russ Kiefer	Idaho
Tom Lorz	Umatilla
Mary Mellema	BOR
Jay Hesse	Nez Perce Tribe
Dave Swank	USFWS
Paul Wagner	NOAA
Julie Ammann	COE
Doug Baus	COE
Tony Norris	BPA
Aaron Marshall	COE
Charles Wiggins	DSC
Steve Hall	COE
Laura Hamilton	COE
Wanda Keefer	Port of Clarkston
Michael Bryant	CBB
Dave Benner	FPC
Eric Chau	COE
Laura Berg	Clearing Up
Ann Setter	COE
Makary Hutson	BPA
Erick Van Dyke	Oregon
Lynn Palensky	NPCC
Brian Zigler	Snohomish
Tom Iverson	Yakama
Ann Setter	COE
Sheri Sears	Colville