

## COLUMBIA RIVER TECHNICAL MANAGEMENT TEAM

September 20, 2017

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.nwd-wc.usace.army.mil/tmt/agendas/2017/>*

**Dworshak Operations:** Steve Hall, Corps, summarized operations at Dworshak Dam. Pool elevation is currently at 1,520.5 feet, with 4.8 kcfs discharge. Per the Dworshak Board agreement, the Corps will hold 4.8 kcfs discharge through 9/21, and then reduce to 2.4kcfs for two days, reducing to 1.6kcfs on 9/22. TDG levels in the Dworshak tailrace are 101%, and about 97% in the hatchery collection channel. Water temperatures at the Lower Granite tailrace averaged 65.5-66.5 degrees, though diurnal fluctuations caused brief periods above 68 degrees in the afternoons. Weather is forecasted to cool down and stay cool through the rest of the year.

Dave Swank, USFWS, provided a fish health report for the hatchery. He noted that there are low levels of gas bubbles in the gills and some in the lateral lines. Fish sampled had mostly full stomachs. Generally, fish are starting to recover from the long-term elevated TDG levels.

**Lower Granite Dam Spill Operation:** The group discussed when to shift back to using the RSW at Lower Granite. Paul Wagner, NOAA, noted that water temperatures in the surface of the forebay have reached 66-67 degrees F, which was previously noted below the target of 68 degrees for returning the RSW to service. Other Salmon Managers agreed that it was a good time to shift back to the RSW.

Ann Setter, Corps, noted the seal in spillbay 1 has been damaged due to debris and has not yet been fixed. The Corps tentatively decided to hold off on repairs until after the 2018 spill season because they are not sure how long it will take to get materials. There was concern from Salmon Managers regarding potential entrapment of fish due to the leaky seal, as this is a primary passage route. They requested that the Corps to fix the seal prior to spring spill season.

Ann noted that she sent out a Memorandum for the Record that the region can comment on. She agreed to take the expressed concerns and request to the project. Ann will provide an update via FPOM and Salmon Managers will discuss the issue in greater depth at the next FPAC meeting. In the meanwhile, the Corps will return the RSW to service on Thursday, September 21, 2017. The RWS will operate from 6am-6pm.

- **ACTION:** The Corps will consider options to repair the seal prior to the 2018 spill season. Ann will provide an update to FPOM and FPAC will discuss at their next meeting.
- **ACTION:** The Corps will resume spilling through the Lower Granite RSW from 6am to 6pm daily, starting on Thursday, September 21, 2017.

### Operations Review

**Reservoirs:** Peter Cooper, BOR, reported on Bureau of Reclamation projects:

- Hungry Horse midnight elevation was 3,548.1 ft., current discharge is 2.2 kcfs, inflows are 500cfs.

- Grand Coulee midnight elevation was 1,282.1 ft; they are filling to hit 1,283ft or higher by the end of September.

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

- Libby midnight elevation was 2,443.6 ft., current inflows are 4.5 kcfs, and discharge is 6 kcfs.
- Albeni Falls midnight elevation was 2,062.2 ft.; yesterday's average inflow was 12.2 kcfs and outflows were 14.1 kcfs.
- Dworshak midnight elevation was 1,520.6 ft.; inflow yesterday was 2.2 kcfs and discharge was 4.8 kcfs.
- Lower Granite average outflows were 23.2 kcfs.
- McNary average outflows were 91.3 kcfs.
- Bonneville average outflows were 95.6 kcfs

Doug noted that the Dworshak Board operation will end when the project intersects 1,520ft, which is expected to be Friday, September 22. At that point Lower Granite, Little Goose, Lower Monumental and Ice Harbor will operate throughout the available operating range and then resume operating throughout the forebay operating range.

**Fish:** Paul reported on fish. For adults he noted passage at Bonneville is 55% of the 10-year average for fall Chinook, 44% for jacks, 33% for steelhead, and 30% for wild steelhead. Passage timing has been a bit late for Chinook and steelhead. At Lower Monumental, fall Chinook passage is 44% of the 10-year average, jacks are 22%, steelhead are 12% and wild steelhead are 15%. He noted that it is still early in the season for steelhead at LMN and there may be a delay due to high water temperatures at Bonneville.

Russ Kiefer, ID, noted that Snake River sockeye conversion is looking great this year, with 139 fish on hand as of last week. Estimates for Bonneville were 401 and 227 at Lower Granite. This is some of the best conversion that they have seen.

In regards to juveniles, there is not much action at this time. Sampling has been reduced, however, will go back to normal sampling now that water temperatures are decreasing.

**Water Quality:** Dan Turner, Corps, reported on water quality. He noted that all tailwater gauges are below 110% TDG. They've started removing the forebay gauges and will be complete with removal by the end of September.

**Power System:** Tony Norris, BPA, reported on the power system. He pointed TMT to the load graphs, noting that the region had a bump up in wind energy, and thus increased action needed to balance the reserves. He said that due to the uncertainty of wind energy, when there is an increase in wind, there will also be an increase in the need for balancing reserves. This is also true for other energy resources. It was noted that the maximum wind capacity in the balancing area is currently 4,782MW.

*Reminder: TMT is now scheduled to meet every two weeks*

**The next regular TMT meeting will be a conference call on October 4th at 9:00.**

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

**September 20, 2017**

Minutes: Pat Vivian

**1. Introduction; Review Meeting Minutes – August 30 and September 6**

Representatives of NOAA, BPA, the COE, USFWS, Nez Perce Tribe, BOR, Washington, Montana, Idaho and others participated in today's TMT meeting chaired by Doug Baus, COE, and facilitated by Emily Stranz, DS Consulting. The official minutes and facilitator's summaries for August 30 and September 6 were approved as final.

**2. Dworshak Operations**

**2a. Current Operations Data.** Steve Hall, COE, reported. Dworshak elevation is currently 1520.5 ft with discharges of 4.8 kcfs through the end of today. Starting September 21, Dworshak flows will drop to 2.3 kcfs for a few days until Dworshak reaches its target elevation of 1520 ft which is expected to occur within the next few days. On September 22, Dworshak discharges will be reduced to 1.6 kcfs.

**2b. TDG in Dworshak Tailrace (DWQI).** Current TDG levels in the Dworshak tailrace are around 101% saturation.

**2c. TDG in Dworshak Hatchery (DHCI).** Current TDG levels in the Dworshak hatchery are 97% saturation.

**2d. Hourly Snake and Clearwater River Temperatures.** Lower Granite tailwater temperatures are currently 65 degrees F with a cooling trend.

**2e. Temperature Model Results (Posted September 8).** The model results are showing cooling. With just a few afternoons above 68 degrees F, the rest of September is expected to be cool.

**2f. Weather Forecast for Lewiston, Idaho.** The forecast is for cooler temperatures over the next few days. With temperatures dropping, the Dworshak operation to release the Nez Perce Tribe's 200 KAF of stored water will end officially on Friday, September 22.

Charles Morrill, Washington, asked whether a slight drop in hatchery TDG readings was due to a change in the degasser or project operations. It was the result of reducing Dworshak discharges from 7

kcfs to 4.8 kcfs and eliminating spill, which was producing most of the TDG, Hall replied. The project is currently spilling below the powerhouse intakes, which affects outflow temperatures because access to 2 kcfs of cooler water from the intakes is lost. Temperatures have been following the typical trend of starting out at 42-43 degrees F and reaching the high 40s by the close of fish passage season.

Dave Swank, USFWS, gave a fish health report from Dworshak National Hatchery. All species have fairly low levels of bubbles in the gills, with only a few bubbles in the lateral lines. The fish are feeding well, and most had full stomachs. It appears they are slowly recovering from prolonged exposure to high TDG levels a few weeks ago.

### **3. Lower Granite Dam Spill Pattern**

There has been discussion of changing the spill pattern at Lower Granite Dam (LWG), which started in Bay 7 and 8 and moved to bays 2 and 3, Wagner said. The RSW was closed to facilitate deep spill in the heat of summer. With the forebay surface water becoming cooler, **NOAA** would recommend switching back to spilling through the RSW now. The forebay surface temperature at Lower Granite is 66-67 degrees F, which is below the previously discussed trigger of 68 for making the change. Russ Kiefer agreed that **Idaho** would support switching to RSW spill now.

Ann Setter, COE, said project staff were able to open and inspect the RSW yesterday within a few hours. Earlier in the season, the gate seal in spillbay 1 was damaged by debris, and inspection found 20 ft of gate seal is missing. Repair is scheduled for the next in-water work window after spill season 2018 ends. An update on LWG spill bay 1 repair is expected soon.

Salmon managers were concerned that the missing gate seal in spillbay 1 could potentially entrain fish in the gap and risk fish injury or mortality, and recommended fixing it as soon as possible.

Russ Kiefer said **Idaho** would be willing to give up some fall operation of the RSW in exchange for getting this problem fixed in time for spring migration. Setter will investigate how much of the work can be done before 2018 passage season starts. Charles Morrill suggested putting this topic on the next FPAC meeting agenda. A key issue will be the timing of materials procurement. **Washington** supported putting the RSW back in service now, as did **USFWS**, the **Nez Perce Tribe**, **Umatilla Tribe** and **Oregon**. With regional consensus, the COE will resume spilling through the RSW daily from 6am to 6pm, starting tomorrow, September 21.

#### **4. Operations Review**

**4a. Reservoirs.** Peter Cooper and Lisa Wright reported. Grand Coulee is at elevation 1282.1 ft with a target of 1283 ft or higher by end September. Hungry Horse is at elevation 3548.1 ft with inflows of 500 cfs and outflows of 2.2 kcfs, operating to Columbia Falls minimums. Libby is at elevation 2443.6 ft with inflows of 4.5 kcfs and outflows of 6 kcfs. Albeni Falls is at elevation 2062.2 ft with inflows of 12.2 kcfs and outflows of 14.1 kcfs. Dworshak elevation is 1520.6 ft with inflows of 2.2 kcfs and outflows of 4.8 kcfs. Lower Granite outflows are 23.2 kcfs, McNary outflows are 91.3 kcfs, and Bonneville outflows are 95.6 kcfs.

Baus reminded everyone that when Dworshak reservoir reaches 1520 ft, as is expected on September 22, the lower Snake River projects will go to the bottom foot of their operating range.

**4b. Fish.** Paul Wagner reported.

Adults: In general, it hasn't a good year for adult fall Chinook returns to BON, but passage recently picked up with 25,502 fall Chinook to date, 57% of the 10 year average. Fall Chinook jacks are 25,402 to date, which is 44% of the 10 year average. Steelhead returns to BON are 97,760 to date, which is 33% of the 10 year average. The wild steelhead return of 3,330 to date is 30% of the 10 year average.

Upriver at LWG, the fall Chinook count is 11,742 to date, 44% of the 10 year average. The fall Chinook jack count at LWG is 2,433 to date, which is 22% of the 10 year average. Steelhead counts to date at LWG are 10,099, which is only 12% of the 10 year average. The wild steelhead count at LWG is 15% of the 10 year average, but it's early in the season for steelhead. Temperatures at BON were warm, so steelhead delayed before migrating upriver. The count to date is 401 adult returns at BON, 227 at LWG, and 139 at Redfish Lake.

DART data indicate that the steelhead return to BON is a bit late, with temperatures being warm until now. Peak returns are occurring upriver at MCN, but the numbers of returning adults to IHR and LWG are a fraction of what they are typically over the past 10 years. The pattern is the same for wild steelhead and Chinook, with peak passage later in the season and temperatures warmer than average.

Juveniles: Counts have been small to date at LGS and LMN. Reduced sampling protocol has been implemented at MCN, JDA and BON, but the normal sampling schedule will resume now that temperatures are below 70 degrees F.

**4c. Water Quality.** Dan Turner, COE, reported. Tailwater gage readings are all below 110% TDG at present. The COE typically begins the process of removing forebay gages at the end of September.

**4d. Power System.** Tony Norris said there was no news to report. He showed TMT a graph that tracks BPA's balancing authority in real time, including the reserves deployed for wind. The maximum deployed for wind and other variable resources is 4,782 MW. This calculation is updated every 6 seconds.

### **5. Next TMT Meeting**

TMT will meet next in a conference call October 4.

<b>Name</b>	<b>Affiliation</b>
Paul Wagner	NOAA
Tony Norris	BPA
Dan Turner	COE
Lisa Wright	COE
Julie Ammann	COE
Doug Baus	COE
Dave Swank	USFWS
Aaron Marshall	COE
Laura Hamilton	COE
Russ Kiefer	Idaho
<i>Phone:</i>	
Scott Bettin	BPA
Jay Hesse	Nez Perce
Peter Cooper	BOR
Steve Hall	COE
Ann Setter	COE
Alfredo Rodriguez	COE
Charles Morrill	Washington
Michael Bryant	CBB
Jim Litchfield	Montana
Jen Graham	Warm Springs