**COLUMBIA RIVER TECHNICAL MANAGEMENT TEAM**
February 14, 2018
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**
Alfredo Rodriguez and Wayne Jousma, Corps, reported on current and proposed operations at Dworshak. Current elevation is 1,539.8, with 15 kcfs outflow as of midnight on 2/14. TDG levels in river are about 121% and 103% in the hatchery. There have been fluctuations in the water supply forecasts; however, actual weather conditions have brought an increase in precipitation at Dworshak and based off of current forecasts, the Corps is anticipating wetter conditions in the basin this spring. The current April to July NWRFC water supply forecast is 2,850 kaf.

Given these conditions and the end of February and March flood control elevation targets, the Corps developed an operation to hold 15 kcfs until Friday (2/16), and then increase to 17kcfs on Saturday, holding 17kcfs through the rest of February and dropping to 12kcfs. They noted that depending on regional preference, they could front load the required outflows and raise discharge up to as high as 25 kcfs in the short term, allowing for a quicker drop back to 12kcfs. The Corps provided both of these modelled scenarios, which are available on the TMT web site.

The end-of-February flood control elevation is 1,516 feet. Given the current forecast, either of these operations will meet the end-of-March and April 15 targets. The February water supply forecast was 2.85 MAF, though 2.9 MAF is expected for the March forecast. Low elevation snow seems to be below normal, though there have yet to be snow flights in the basin. The Corps noted that at this point, they want to work towards a position where they can either refill or draft deeper, whichever is necessary depending on flows, however, they need to move a significant amount of water to do so.

After a caucus, the Salmon Managers suggested that the Corps increase to 17kcfs today, and then to 20 kcfs next week once the hatchery has completed the transport of Coho off station and to a hatchery upstream. The Coho are currently scheduled to be moved on Wednesday, February 21, however, the hatchery is trying to move this date up to Monday or Tuesday. Paul Wagner, NOAA, will inform the Corps once the fish are off station. The objective of this operation is to allow for a short duration bump in discharge in order to get back down to 12 kcfs outflow as soon as possible, while still operating to the end-of-month elevation.

→ **Action:** The Corps will increase DWR outflows to 17kcfs today (2/14) and hold until the Coho have been moved from the Dworshak Hatchery (currently scheduled for 2/21, however, potentially sooner). Once the Coho are moved off station, the Corps will increase DWR outflows to 20kcfs until is it feasible to drop back down to 12kcfs and meet the end of month flood control elevation targets for February and March.

Wayne reported that Unit 3 maintenance is currently on schedule. Some stator bars have been removed, tested and reinstalled. At this point they are not seeing additional delays.

**Methodologies to Monitor Adult Passage in the Snake River**
Russ Kiefer, Idaho, suggested a path forward for determining a regional method to monitor adult passage during the upcoming spill season. The current plan is to spill to the gas cap this spring. In the past, high levels of spill have contributed to adults holding at Little Goose, and also possibly at Lower Granite. The region has previously discussed developing a methodology to identify adult delay and currently the Fish Passage Center, DART, and NOAA Hydro are developing models to monitor adult passage. Russ suggested that TMT could either: 1) use the three methods to track passage in season; 2) provide input to the three groups clarifying TMT's needs and suggest that historic data is run through the models to see what is picked up and if there are false positives; or 3) create a model through TMT.

After discussion, TMT agreed to provide guidance to the three groups developing the methods and Russ agreed to work with regional partners to produce a first draft guidance. He will provide the draft guidance to the TMT in time for members to discuss at the next TMT Process meeting on Wednesday, February 21. Paul will give a heads up on TMT's next steps to NMFS-Hydro and DART (Blane and Suzanna), and Erin (FPC) will update the FPC team as well. Members thanked Russ for getting TMT focused on this issue early in the process.

→ **Action:** Russ will provide draft guidelines for those developing the methodologies to monitor adult passage in the Snake River; these guidelines will be reviewed and discussed by TMT at their February 21st meeting.

**The next TMT meeting will be face-to-face on Wednesday, February 21, at 9:00am.**
**A DS Consulting Process meeting will follow.**

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

**February 14, 2018**
Minutes: Pat Vivian

## *1. Introduction*

Representatives of Washington, USFWS, the Nez Perce Tribe, BOR, Oregon, BPA, NOAA, COE, Idaho, CRITFC and others participated in today's TMT meeting chaired by Doug Baus, COE, and facilitated by Emily Stranz, DS Consulting.

## *2. Dworshak Operations*

**2a. Hourly Data.** Alfredo Rodriguez, COE, reported. Current elevation of Dworshak reservoir is 1539.48 ft with 15 kcfs releases starting at zero hours this morning.

**2b. Total Dissolved Gas Report for Dworshak.** Current TDG levels are around 121% and this operation hopefully will continue until Friday. There are also considerations of increasing to 25 kcfs out now instead of later, which seems more and more likely. The forecasts are starting to merge, and it looks like it's going to be a wet spring.

**2c. Dworshak National Fish Hatchery Collection Channel (DHCI) Total Dissolved Gas.** There are concerns regarding current TDG levels of over 103% saturation in the hatchery.

**2d. NWRFC Dworshak Dam Water Supply Forecast.** Today's NWRFC Water Supply Forecast for Dworshak Dam with 5 days QPF for the period of April-July is 2850 kaf, which is in agreement with the Corps Dworshak Official February Runoff Forecast (April-July) the first of the month that was 2849 kaf. It's looking more and more like we might see upwards of 3200 kaf, dependent on how much of the forecasted precipitation actually comes into the basin.

Yesterday the COE bumped up project outflows to 15 kcfs, based on forecasted discharges needed to reach the end of month elevation of 1516.5 feet. Discharges of 15 kcfs will continue through February 16, then increase to 17.5 kcfs on February 17 through the end of February. After that, outflows will drop to 12 or 12.5 kcfs based on a combined 10 day RFC forecast for the remainder of the period. This operation is projected to allow DWR to meet its end of February and March flood control elevations. Initially the COE looked at making a deviation request for the end of February flood control elevation, but as precipitation continues, along with the possibility of having to draft deeper in March, it seems wise to hit the end of February elevation target of 1516.5 ft.

The goal is to position the reservoir to meet refill if the forecast comes in drier, or to be able to draft deeper if the forecast increases, which looks more and more likely.

Charles Morrill, Washington, asked whether a snow flight in the basin has been made. No, the storm event prevented that, Rodriguez said. The COE is working with NRCS to schedule another attempt to hit the more pertinent SNOTEL sites.

Jay Hesse, Nez Perce, asked whether flood control calculations have taken into consideration that water supplies are lower in the southwestern part of the basin. No, the mainstem Clearwater has a flood control target at Spalding, and the COE tries to maintain flows at no greater than 90 kcfs through Spalding. The snowpack in the Clearwater Basin is currently 114% of normal snow water equivalent. When mainstem flows increase, typically the COE tries to shave the peak off flows coming out of the North Fork to limit flows at Spalding to less than 90 kcfs as much as possible, Wayne Jousma, COE, said.

Paul Wagner, NOAA, asked, if the water supply forecast for DWR is 2.9 maf on March 1, putting the end of March elevation target at 1490 ft, would the project operate to that? The current forecast is 2.85 maf, so 2.9 maf would mean a slightly lower elevation at the end of March, Jousma replied.

Morrill asked whether the COE will look at the mid-month forecast in March as well as weather conditions. Yes, Jousma said, the goal is to make the best decision possible toward the end of the month, increasing discharges as needed to target the new end of month elevation was an example given.

**2e. Salmon Manager Caucus.** The Salmon Managers caucused to discuss two options for Dworshak operations moving forward:

(1) Hold 15 kcfs through February 16, then increase to 17 kcfs on February 17. Maintain 17 kcfs February 17 through February 28 and then drop to 12 kcfs on March 1; or

(2) Hold 15 kcfs through February 16, then increase discharges to 25 kcfs (or somewhat less) on February 17, because hatchery conditions are such that the water supply for the next week will be lower in TDG. Maintain 25 kcfs February 17 through February 24 and then reduce outflows to 12 kcfs on February 25.

Russ Kiefer, Idaho, asked whether the Salmon Managers should consider while caucusing how much flexibility there is to shape discharges to fit biological needs. Flexibility is possible as long as the end of month target of 1516.5 ft is met, Rodriguez replied.

Dave Swank, USFWS, asked about flood control issues that arose in March 2017 when discharges went up to 25 kcfs. Are river levels low enough this year that it wouldn't be an issue?

We have the option of releasing gas into the river now, as opposed to later when fish are present, Rodriguez replied. Flows at Spalding are currently 34 kcfs and at Peck, 25 kcfs. Average Dworshak inflows are predicted to be around 8 kcfs for the rest of the month, based on the RFC 10 day forecast. Last year when discharges were 25 kcfs, TDG levels in the hatchery were about 106% and in the river, 125-126%.

Hesse requested an analysis of how quickly 25 kcfs would draft the reservoir to the desired level. Rodriguez offered the following calculations of how 25 kcfs releases would look. To reach an end of month elevation of 1515.7 ft, which is 0.8 ft below the end of February target, Dworshak would need to release 25 kcfs for 7 days starting at midnight tonight, then drop from 21 to 15 kcfs and finally to 12 kcfs out.

After caucusing, Wagner reported that the Salmon Managers agreed releases should go to 17 kcfs now and 20 kcfs next week.

Hesse said coho are scheduled to be moved off station on February 21, but that release could be moved up to February 19 or 20. He requested that releases greater than 17 kcfs not start until the hatchery coho have moved to the Kooskia National Fish Hatchery.

Rodriguez asked about BPA's need to market the energy produced by the increase. BPA will plan on flows of 20 kcfs starting the afternoon of February 21, Scott Bettin said. This assumption will be included in the model. Norris said a number of special operations on the river are complicating the operation as well.

Effective today, the COE will increase Dworshak outflows to 17 kcfs until the afternoon of February 21 when flows will increase to 20 kcfs, Baus said. Hesse clarified that the purpose of bumping flows up to 20 kcfs now is to ramp back down to 12 kcfs as soon as possible. If the coho are able to be moved off station sooner than February 21, Hesse will contact Wagner, who will contact the COE.

Baus reminded everyone that if Dworshak forecasted inflow volume increases, discharges will be increased as needed to meet the project's end of month flood risk management elevation.

Hesse recalled that last year, when Dworshak flows went to 17 kcfs, TDG levels in the hatchery were 104.5% and the fish stopped feeding. This year the

fish are on the verge of where they stopped feeding in the past, and the hatchery is considering an emergency release.

Erick Van Dyke, Oregon, asked for an update on the Dworshak unit 3 rehabilitation schedule. Jousma said everything is moving along as planned, and there have been no changes in the schedule since TMT discussed it last week.

***3. Methodologies to Monitor Adult Passage in the Snake River***

Russ Kiefer, Idaho, said we need to do some collective thinking now about the plan to spill to the gas cap this spring. In the past, concerns were raised about adult delays with heavy spill, primarily at Little Goose Dam and at Lower Granite as well.

A means of tracking adult passage on the Snake that would provide a timely warning of adult delays is warranted. PIT tag data and the previous year's data on conversion from one project to another could be used to identify expected patterns of adult behavior. There is a lot of interest in the region in solving this technical problem.

Three different groups (FPC, DART and NMFS) are developing methodologies to track and monitor adult passage on the Snake River this year. If any of these models indicate a need for concern, TMT could look at the data and see how the other models are tracking, Kiefer said. This could help inform decision making.

Kiefer also suggested TMT communicate with the three groups working on the models, letting them know what kind of information is needed. That could include identifying periods where delay has been a concern in the past, and running models based on historic data to see which models identify those same periods. We also need to be careful about "false positive" modeling that merely indicates a normal variation in adult passage. Lastly, TMT could form a task force to figure out what methodology to use. Kiefer hoped TMT would have a plan in mind by the time it meets next week.

TMT needs to decide whether to discuss this at public meetings and post the results online, or coordinate offline until an issue is identified, Wagner and Bettin said. The goal is to have a methodology by April when spill season starts.

Idaho developed a methodology that alerted us of adult delays in the past, using adult counts from Ice Harbor to Lower Granite, Kiefer said. He will use PIT tag data to look at each reach individually. He also proposed that TMT form a subcommittee to draft guidance for the three groups. He offered to take

the lead and serve as a point of contact for TMT. Wagner offered to coordinate with DART on this.

### *4. Next TMT Meeting*

TMT will meet next in person on February 21.

| ***Name*** | ***Affiliation*** |
|---|---|
| Charles Morrill | Washington |
| Dave Swank | USFWS |
| Jay Hesse | Nez Perce |
| Peter Cooper | BOR |
| Erick Van Dyke | Oregon |
| Leah Sullivan | BPA |
| Paul Wagner | NOAA |
| Tony Norris | BPA |
| Doug Baus | COE |
| Lisa Wright | COE |
| Laura Hamilton | COE |
| Charles Wiggins | DSC |
| Russ Kiefer | Idaho |
| Tom Lorz | CRITFC |
| Blaine Bellerud | NOAA |
| Ann Setter | COE |
| Dave Benner | FPC |
| Michael Bryant | CBB |
| Ruth Burris | PGE |
| Michelle Yuen | COE |
| Wayne Jousma | COE |
| Alfredo Rodriguez | COE |
| Aaron Marshall | COE |