

## COLUMBIA RIVER TECHNICAL MANAGEMENT TEAM

February 1, 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 Update

Steve Hall, Corps, provided an update on Dworshak operations. Current operations are aimed at not exceeding 110% TDG from Dworshak at least through this week until the official February water supply forecast is available and the TMT can revisit the operation. TDG has varied between 108% and 110%, since the current operation was coordinated at the January 25<sup>th</sup> TMT meeting. Total discharge is 8.5 kcfs, with 4.7 kcfs of generation and 3.6-.7kcfs of spill. Current elevation is 1524.2ft, drafting about 1 foot per day to reach the target end of February flood control elevation.

Steve provided four graphs that model Dworshak operations at estimated 2.6 and 2.7maf, all of which are available on the TMT web site. The Climate Prediction Center currently calls for above average likelihood of colder than normal and wetter than normal weather activity for the Dworshak basin over the next 10 days.

### TMT discussed the operation and shared the following:

- Steve confirmed that with Unit 3 out of service, maximum powerhouse capacity will be 4.7 kcfs.
- If the CPC prediction is correct, this could well be a 2.7 maf year; a normal water year in the Clearwater Basin is between 2.5 and 2.5maf.
- Currently, snowpack is 78% of average. However, most SNOTEL sites are at higher elevations, and thus the higher than average snowpack levels in lower elevations are underrepresented.
- Several TMT members expressed concern around balancing the risk of higher TDG levels with having sufficient spring/summer augmentation flows.
  - Steve noted that refilling will ensure sufficient summer augmentation water. In regards to spring augmentation, the project will be limited with Unit 3 under repair; this will constrain Dworshak to 9 kcfs. Typically, the TMT will coordinate up to 15 kcfs, spring augmentation; however, this cannot happen this year.
  - Higher spring runoff may mean there is more water to move, at the risk of high TDG levels.
  - Earlier runoff of the low elevation snowpack may mean there is less water to use to refill.
  - Umatilla and Oregon expressed interest in dropping down to maximum powerhouse until next week, and then reassessing based off the water supply forecast.
  - All other TMT members present (BPA, Colvilles, ID, MT, NMFS, WA, USFWS) expressed interest in continuing the current operation to not exceed 110% TDG.
  - The Nez Perce voiced concern by email about high TDG levels when fish are moving in the river; the Nez Perce were okay with continuing the current operation until the February forecast is available.
- Salmon Managers requested that the Corps provide graphs that show the last part of April and into spring and summer flow augmentation operations. They noted that it would be helpful to get a better picture of what those later operations may look like. The Corps agreed to provide extended scenarios at the next TMT.

After discussion and comments, the Corps agreed to maintain current operations to keep TDG levels below 110% as prudent flood control operation, until the TMT can revisit the operation with an updated forecast. The February forecast should be available Friday, February 3rd.

- **ACTION: The Corps will continue to operate DWR to not exceed 110% TDG until further coordination through the TMT. The Corps will provide longer-term modelling to help inform the February 8<sup>th</sup> TMT discussion.**

### **Unit 3 Milestones**

Steve Hall provided an updated chart of Dworshak Unit 3 milestones. He explained that the *Revised Schedule* column is the contractor's estimate of milestone completion dates. The *Actual (A)/Predicted\** column is either the actual completion date or the Corps' "best guess as to what will occur." This column estimates that Unit 3 will be returned to service on July 08, 1017. The schedule will be updated in March.

Work on the project is proceeding as quickly as possible. However, the precision of the work required limits the hours crews can be expected to work and still provide adequate product.

**The next TMT meeting will be a conference call on February 8, 2017.**

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

**February 1, 2017**  
Minutes: Pat Vivian

**1. Introduction**

Representatives of Montana, Washington, the Colville, Spokane, Umatilla and Yakama tribes, USFWS, COE, BPA, NOAA, Idaho, Oregon, BOR and others participated in today's TMT conference call chaired by Doug Baus and facilitated by Emily Stranz, DS Consulting.

Due to an all-staff meeting the Nez Perce Tribe didn't participate, although they have a strong stake in TDG management at Dworshak Dam, the main subject of discussion. Prior to the call, Nez Perce fisheries manager Dave Johnson sent an email to all TMT members documenting the tribe's position regarding management of TDG releases from Dworshak.

**2. Dworshak Update**

The goal of the conference call today was for the COE to provide and update on the current Flood Risk Management (FRM) operations at Dworshak Dam based on recommendations received from Salmon Managers at the previous TMT meeting on January 25. During that meeting the consensus recommendation from Salmon Managers (IDFG, NPT, Colville, Montana, NOAA, Umatilla, Warm Springs and Washington) regarding Dworshak operations was to release a combined spill and powerhouse flows close to, but not to exceed 110% TDG saturation levels downstream. Steve Hall, COE Walla Walla, presented the latest information on Dworshak.

**2a. Current Operations.** Dworshak releases have been fluctuating around 8.5 kcfs in an effort not to exceed 110% TDG saturation, with 4.7 kcfs in generation and 3.7 kcfs in spill. Maximum powerhouse capacity is 4.7 kcfs due to unit 3 outage. Yesterday TDG levels went a bit higher than desired but are currently hovering around 108-110% saturation. The reservoir is at 1524.2 ft elevation, drafting about a foot a day.

**2b. Potential Operations.** The early bird February forecast calls for a 2.6-2.7 maf year. The official forecast will be released on February 2 or 3. It was delayed because snow storms have made the Elk Butte SNOTEL station inaccessible, so the COE needs to perform an analysis to estimate SWE readings for the station. A snow flight is scheduled for February 7-9 or as soon as the weather allows.

Hall showed TMT graphs depicting four operational scenarios based on a 2.6 maf and a 2.7 maf official February forecast:

1. Based on a 2.6 maf forecast, operate the project to end of month flood control elevations. This could mean having to discharge high inflows in April and generating TDG values in excess of 120% saturation.
2. Based on a 2.6 maf forecast, continue to release just under 9 kcfs, which is currently close to 110% TDG saturation. Under this scenario, the project can continue to discharge 9 kcfs inflows through April 15 without having to exceed 110% TDG.
3. Based on a 2.7 maf forecast, operate the project to its end of month flood control elevations, with a mid-month adjustment. Under this scenario, Dworshak would need to release TDG levels of 115% saturation or more for the first 15 days of April in order to draft the reservoir to its April 15 flood control elevation.
4. Based on a 2.7 maf forecast, release flat flows through the end of March, then adjust releases based on the mid-March forecast to meet the April 15 flood control elevation. This scenario keeps Dworshak releases close to 110% TDG throughout passage season.

The Climate Prediction Center is forecasting colder than normal temperatures and wetter than normal conditions through the rest of winter and spring, Hall noted. When Jim Litchfield, Montana, asked whether colder and wetter conditions might push the official February forecast closer to 2.7 maf, Hall said that's a likely outcome.

Tom Lorz, Umatilla, asked how current snowpack relates to the historic average. Snowpack in Dworshak basin is currently 78% of average. Hall explained this is because accumulation at lower elevations is above normal, but the SNOTEL stations that generate SWE data measure higher elevation snowpack, which is below normal due to unusually warm temperatures in November and December. The COE is watching this situation closely. Lorz said his main concern is this warming trend, which could lead to below average inflows later, making refill difficult once the forecast dries up. Hall said the COE's main concern is attaining the April 15 flood control elevation at Dworshak. A normal water year at Dworshak is 2.4-2.5 maf volume. Because a 2.7 kcfs forecast is well above normal, the COE has no reservations about refill at this point. The main concern is preventing high TDG exposures in April.

The Salmon Managers gave their views of the four operational scenarios.

- **Umatilla** prefers limiting Dworshak to maximum powerhouse releases next week. In general, favors the first operational scenario as a strategy for conserving water in case the forecast dries up later in the season.
- **Idaho's** biggest concern isn't refill end of June but high TDG levels in April. The risk of discharging high TDG levels is greater than the potential impact of not being able to augment summer flows. Therefore, Idaho recommends continuing to draft Dworshak below its current flood control targets while keeping TDG

releases close to 110% saturation. With a 2.6 maf forecast, this operation would allow plenty of time to draft the reservoir down to its April 15 flood control elevation. The concept of risk needs to be clearly defined. When people say risk, do they mean the risk of missing refill, or the risk of having to release high TDG?

- **USFWS** agrees with Idaho. Concerns about over drafting are valid, but at this point there are still a couple of months to address them. Defines the risk at hand as not knowing how much snowpack volume will be needed to refill the reservoir and release summer augmentation flows.
- **Washington** favors the fourth option for its low flow volume while keeping TDG levels below 115% saturation. This amounts to continuing the current operation while watching the forecast closely for indications of a drying trend. This scenario would allow augmentation flows of about 11 kcfs in later March and early April when fish begin to move. It involves the least amount of time releasing 115% TDG before April 15, based on STP inflow traces.
- **Oregon** believes that releasing inflows of up to 110% TDG saturation over-estimates inflow volumes later. Agrees with Umatilla on a more conservative approach, limiting releases to maximum powerhouse capacity.
- The **Nez Perce Tribe** was unable to participate today, but sent an email to all TMT participants on January 1<sup>st</sup>, 2017, that stated the following, “ The Nez Perce Tribe Fisheries Department has its all-employee meeting on the 1st , so we will have no one in attendance on the TMT call. As described in the call last week, we are concerned about high, chronic levels of TDG while steelhead are milling in the North Fork waiting to return into the hatchery; with the effects on hatchery fish when they are released; and with the period following fall chinook emergence. We are ok with waiting for an updated forecast, if it happens soon; but are concerned with waiting too long before making a decision and having our options for managing the release of high spill being foreclosed.”
- **NOAA** would be comfortable with either scenario (i.e. manage Dworshak to its flood control elevations vs. draft below flood control as a precaution) but favors the latter approach because it’s generally best to be ahead of the curve. Supports Idaho’s position.
- The **Colville Tribe** would also be comfortable with either scenario at this point, but leans toward keeping releases close to 110% TDG as a precaution against high TDG later.
- **Montana** agrees with Idaho that continuing the current operation is advisable, and the greatest risk at this point is high TGD levels in April. The fourth scenario is the best one. It’s important to get ahead of the curve while we can.

- **BPA** expects inflows to rise in the near future, when it will be difficult to move water out of the reservoir. It's easier for the river to recover from high TDG levels now than in April. Supports the COE in managing this operation.

Hall reminded TMT that spring flow augmentation will be limited to 9 kcfs until Unit 3 is back on line. He did not foresee any problem providing 9 kcfs in augmentation. Typical Dworshak releases in April are 15 kcfs, but that will not be possible this year. Historic inflows in April are well above 9 kcfs even in a low water year, which underscores the importance of releasing some volume now.

NOAA asked the COE to provide a graphic analysis of the balance between the two risks (exceeding TDG water quality standards vs. providing spring flows in April alongside refill). The ultimate question to be addressed is how spring flows will segue into summer refill. A graph depicting the long-range outlook would help clarify the discussion. Oregon seconded the NOAA request.

The COE will provide this information next week. Meanwhile, Dworshak releases will be managed to produce close to 110% TDG without exceedances. Hall gave two reasons for continuing the current operation rather than ramping down to maximum powerhouse as recommended by Oregon and Umatilla: (1) The Nez Perce, while not present today, have made their position clear, as has Idaho; they are the biggest stakeholders in the decision. And the majority of TMT members present would prefer to continue the current operation. (2) The decision ultimately involves flood control, which is the COE's responsibility.

**2c. Dworshak Unit 3 Milestones.** Hall presented the Dworshak Unit 3 estimated schedule for repairs in response to a request from TMT for this information. The original schedule is shown alongside the contractor's revised schedule, as well as the COE's best estimate of when the work will actually be finished.

Based on this schedule, the return to service date for Unit 3 has been moved from May 1 to July 15. The main cause of the delay is lead abatement work. No updates to the schedule are expected until the next major milestone on March 18, completion of stator core installation. The COE has pressed the contractor to finish as soon as possible, but the work involves such high-precision welding that requiring crews to work long hours could backfire in terms of mistakes that have to be repaired.

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

TMT will meet next in a conference call February 8 to revisit the Dworshak operation in light of updated forecast information.

<b>Name</b>	<b>Affiliation</b>
Jim Litchfield	Montana
Charles Morrill	Washington
Sheri Sears	Colville

Burt Nichols	Spokane Tribe
Tom Lorz	Umatilla
Dave Swank	USFWS
Doug Baus	COE
Tony Norris	BPA
Steve Hall	COE
Paul Wagner	NOAA
Julie Ammann	COE
Lisa Wright	COE
Ron Thomasson	COE
Laura Hamilton	COE
Russ Kiefer	Idaho
Wayne Jousma	COE
Alfredo Rodriguez	COE
Mike Shafley	Snohomish PUD
Steve Lyman	PGE
Tom Iverson	Yakama Nation
Margaret Filardo	FPC
Michael Bryant	CBB
Dave Benner	FPC
Tory Hines	DSC
Charles Wiggins	DSC
Laura Berg	Clearing Up
Erick Van Dyke	Oregon
Mary Mellema	BOR