

COLUMBIA RIVER TECHNICAL MANAGEMENT TEAM

April 6, 2016

Facilitator's Summary

Facilitator: Emily Plummer; Notes: Tory Hines, 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.

Review Meeting Minutes

The official TMT minutes and the Facilitator's Summaries for the March 16th and 30th meetings were reviewed and approved by TMT members.

Dworshak Dam Spill Test

Doug Baus, USACE NWD, noted that posted to the TMT agenda is a link to the revised spill test proposal, which includes an overview, background information and schedule; he thanked TMT members for their feedback at the last meeting. Steve Hall, USACE Walla Walla, stated that the Corps is proposing the following schedule of test operations:

- Monday, May 2, 1200-1800 hours: operate Dworshak Dam with two small units plus spill to target 115% TDG at the Dworshak tailwater gauge.
- Tuesday, May 3, 1200-1800 hours: operate Dworshak Dam with two small units plus spill to target 120% TDG at the Dworshak tailwater gauge.

Steve emphasized that the amount of flow released depends on the temperature, and noted that the proposal is based on current conditions and may have to be adjusted in real time. Discharges during the test are expected to be approximately 8.5kcfs and 9.5kcfs respectively, if water temperatures remain cool. Laura Hamilton, USACE NWD, asked if that is total project discharge. Steve noted it is total project discharge and roughly 4.8kcfs will go through two turbines and the remainder will be spill through the ROs. Ambient air temperature and pressure greatly influence TDG generation, the exact rate of discharge required to achieve the target TDG is. TDG will be measured in several locations: downstream of the degassing equipment, in the nursery head tank, and in the raceway supply head boxes. The Corps is meeting with the Dworshak National Fish Hatchery on Friday, April 8th, to discuss the locations of the water quality monitoring probes.

Tony Norris, BPA, asked if the hours of operation for the spill test could be changed to 1000-1600 hours. Steve Hall noted that the time change is no problem. Doug also noted that the Corps will coordinate with Idaho DEQ and Nez Perce Water Quality to request a short duration exemption to operate above the water quality standard of 110% TDG.

The Facilitator, Emily Plummer, asked TMT members to provide input on the current proposal, with the revised testing times between 1000 and 1600 hours. TMT members shared the following:

- BPA: Supports the operation, however, would like to request a 10:00am start time.
- NOAA: Support.
- Umatilla: Support.

- MT: No objection.
- Colville: No objection.
- WA: Support.
- BOR: Supports the operation along with BPA's modification in start time.
- ID: Supports the operation including the 120% test. Russ noted that Idaho DEQ has ultimate approval on the short term exemption and needs to be coordinated with ASAP.
- Nez Perce: No objection, however, he cannot speak on behalf of Nez Perce Water Quality. He will respond to any information requests or questions they may have.
- OR: Supports the operation and is interested in seeing the results. Erick will follow up with Steve Hall on more specifics of the test.

Emily thanked TMT members for their input, noting that USFWS was not present to weigh in. Doug reiterated that the Corps will coordinate with Idaho DEQ and Nez Perce Water Quality to request a temporary TDG exemption, if there are any changes as a result of those conversations, the Corps will update TMT. Pending approval of the short term exemptions, the Corps will implement the following operation:

On Monday, May 2, 1000-1600 hours: operate Dworshak Dam with two small units plus spill to target 115% TDG at the Dworshak tailwater gauge. Tuesday, May 3, 1000-1600 hours: operate Dworshak Dam with two small units plus spill to target 120% TDG at the Dworshak tailwater gauge.

- **ACTION:** The Corps will coordinate with ID DEQ and NP Water Quality to request short term TDG exemptions; if approved, they will implement the DWR spill test on May 2nd, and again on May 3rd. They will bring any revisions to the operation outlined above to the TMT.
- **ACTION:** Steve Hall and Russ Kiefer will connect with Idaho DEQ and invite them to participate in the meeting with Dworshak National Fish Hatchery on Friday, April 8th.

Operations Review

Reservoirs: Mary Mellema, BOR, reported on Reclamation projects:

- Hungry Horse midnight elevation was 3,519.22ft, with 2.1kcfs outflow.
- Grand Coulee elevation was 1,252ft, the project is drafting up to the April 10th requirement, which is expected to be around 1,253ft. The end of April flood control elevation will be in the 1,244ft range and is dependent on the volume forecast. Drumgate maintenance is on schedule and planned to end on May 6th.

Doug Baus reported on Corps projects:

- Libby midnight elevation (4/5) was 2,397.9ft, with 10.5kcfs inflow and 6.9kcfs outflow.
- Albeni Falls midnight elevation (4/5) was 2,052.5ft, with 29.9kcfs inflow and 20.1kcfs outflow.
- Dworshak midnight elevation (4/5) was 1,565.2ft, with 11.7kcfs inflow and 15.7kcfs outflow.
- Lower Granite average outflow (4/5) was 68.6kcfs.
- Bonneville average outflow (4/5) was 218.2kcfs

Paul Wagner, NOAA, noted that the STP shows outflows at Dworshak up to 20kcfs, and then back down to 10kcfs, and 7kcfs. He noted that from a fish perspective it would be better to move water when more fish are in the system. Steve noted that Dworshak outflows are currently at 15.5kcfs and TDG levels are less than 110%. The Division Office is considering a deviation request received from Walla Walla District Office that would result in an end of April forebay elevation that is higher than the April 30 Flood Risk Management Elevation (1543.5 feet) specified in the April Runoff Forecast. The water supply forecast increased 300kaf and as a result the flood control elevations are lower than expected. The Corps increased discharge to combat this, hoping to stay below 110% TDG. Dave Statler, Nez Perce, asked if the increase in the water supply forecast of 300kaf is a combination of aerial snow and snow depth. Steve noted that the model is based on precipitation levels at the headquarter gauge, as well as the water content at a variety of Snotel sites. The reason for the increase from March to April has to do with snow in the basin, lower elevation snow has melted off while higher elevation snow remains. Dave expressed concern of overestimating the water supply which will affect operations in later months. Steve stated that the modelers consider how estimates affect future operations and the biggest unknown is predicting the weather. Moreover, snow depth is variable while snow water content is constant, and while the SOI is not an exact predictor of the forecast, the Corps is confident in their estimations at this point.

Fish: Paul Wagner, NOAA, reported on fish. For adults, a total of 706 Spring Chinook have passed Bonneville so far this season. This is near the 10-year average (698). The recent count (4/5) is 154, an increase from last week's total of 166. Steelhead numbers below Bonneville are 2,989, which is near the 10-year average. At Lower Granite, 4,314 steelhead have passed, 70% of the 10-year average. For wild steelhead, 2,269 have passed the project, 115% of the 10-year average. Wild steelhead continue to have better returns than hatchery steelhead.

For juveniles, yearling Chinook numbers at Lower Granite Dam are at 129,000 for the week. This is relatively high for the year. At Bonneville, 1,161 have passed on 4/5 and at John Day 1,420 on 4/2. At Little Goose, 2 holes were discovered in a pipe which is why juvenile collection is out of commission. The pipe is expected to be repaired by the end of the week, but presently there is no physical handling of juveniles. Overall, a higher ratio of wild to hatchery fish is in the system compared to average; this could be related to a sampling error, but current counts indicate there are 33% wild fish in the system. This is up compared to the more typical 80% hatchery and 20% wild.

For sub-yearlings, fry numbers increased at Lower Granite. At Bonneville, fry are passing, but it is still early for sub-yearlings to be collected. Steelhead numbers are also picking up based on PIT tag returns. Lamprey numbers at Bonneville and John Day are slowly picking up, John Day remains the site with the highest lamprey count. Additionally, spill on the lower Columbia will begin on Sunday, April 10th.

Water Quality: Scott English, USACE NWD, noted that all operations are running and the monitoring equipment is properly functioning throughout the system. The Corps is continuing to update Dworshak values based on observed values. Tom Lorz, Umatilla, asked when the Little Goose operation will return to a normal spill pattern. Julie Ammann, USACE-NWD, noted that at this time a date has not been set for the project to return to normal spill. Doug stated that the

District will provide a timeline for the repair via FPOM.

Power System: Tony Norris, BPA, noted that there was nothing to report.

The next TMT meeting will be a conference call on April 13th at 9:00am.

Columbia River Regional Forum
TECHNICAL MANAGEMENT TEAM OFFICIAL MINUTES

April 6, 2016
Minutes: Pat Vivian

1. Introduction

Representatives of the COE, NOAA, BPA, Oregon, Washington, Montana, Colville Tribe, BOR, Yakama Tribe, Idaho, Nez Perce Tribe and others participated in today's TMT meeting. This summary is an official record of the conversation, not a verbatim transcript.

2. Meeting Minutes – March 16 and 30

TMT approved the minutes and facilitator's notes for these meetings as final.

3. Dworshak Dam Spill Test

In coordination with Regional Salmon Managers during the FPOM coordination of the Dworshak Dam unit 3 outage the COE received the recommendation to perform a spill test prior to the outage. The intent of the test would be to acquire data that would be used to inform operations at Dworshak Dam during the upcoming unit 3 outage. During the March 30, TMT meeting the COE coordinated a proposed spill test and received feedback from TMT. The proposed test posted to today's agenda includes the recommendations the COE received during the March 30 TMT meeting.

The test is proposed to run May 2 from noon to 6 pm, Steve Hall, COE, said. Only the two small units will be operating, and Dworshak will spill to target 115% TDG saturation as measured at the tailwater gauge. On May 3 from noon to 6 pm, the test will be repeated to target 120% TDG saturation at the tailwater gauge. Releases will depend largely on temperatures at the time of testing. The COE estimates that Dworshak will need to release 8.5-9.5 kcfs total outflow to produce the desired TDG levels for testing, but the rate could change depending on temperatures. Approximately 4.8 kcfs will pass through units 1 and 2 and the rest as RO spill. These plans will be confirmed at a meeting with Dworshak National Fish Hatchery staff on Friday, April 8.

To accommodate current energy use patterns, Tony Norris, BPA, requested that the spill test be conducted from 10 am to 4 pm on both days, and the COE revised the test plan accordingly. Baus reminded TMT that short term exemptions from state water quality standards will be needed from Idaho DEQ and the Nez Perce Tribe as a prerequisite for testing TDG values above 110%. Spill will be discharged through the regulating outlets because the Dworshak pool elevation is currently lower than the spillway elevation.

TMT members gave their views of the spill test (USFWS was not present so the COE followed up with a phone call and email after the meeting):

- **BPA** – No objection with schedule change to 10 am-4 pm spill.
- **NOAA** – Supports the spill test.
- **CRITFC/Umatilla** – Supports the test.
- **Montana** – No objection.
- **Oregon** – Supports the test. Has questions and will follow up with the COE.
- **Washington** – Supports the test.
- **Colville Tribe** – No objection.
- **BOR** – No objection with schedule change to 10 am-4 pm spill per BPA request.
- **Idaho** – Supports a test of both 115% and 120% TDG pending IDEQ approval of a short term exemption waiver.
- **Nez Perce** – No objection, with tribal approval of a water quality exemption to be handled as a separate process.

Baus estimated that coordinating the Dworshak spill test with Idaho DEQ and Nez Perce water quality staff will take 7-10 days. The COE will report to TMT on final test plans when that process is complete.

4. Operations Review

4a. Reservoirs. Mary Mellema and Doug Baus reported. Hungry Horse is at elevation 3519.22 ft with inflows of 5.4 kcfs and discharges of 2.1 kcfs. Grand Coulee is at elevation 1252 ft; drum gate maintenance will continue through May 6. Coulee is expected to reach its 1253 ft April 10 requirement, then draft to a flood control elevation in the range of 1244 ft depending on the volume forecast.

Libby is at elevation 2397.9 ft with inflows of 10.5 kcfs and discharges of 6.9 kcfs. Albeni Falls is at 2052.5 ft with inflows of 29.9 kcfs and releases of 20.1 kcfs. Dworshak is at elevation 1565.2 ft with inflows of 11.7 kcfs and releases of 15.7 kcfs. Lower Granite releases are 68.6 kcfs. Bonneville releases are 218.2 kcfs.

Paul Wagner, NOAA, asked whether the COE plans to release 20 kcfs from Dworshak this week as indicated by STP projections. Wouldn't it make sense to release some of that water when more fish are present? Hall replied that Dworshak is releasing 15.5 kcfs and producing less than 110% TDG in the tailrace. The COE is involved in a deviation request to avoid the 25 ft draft that normal flood control operations would require in response to the latest water supply forecast, which increased by about 300 kaf. The COE will report back to TMT on the flood control deviation request as well as the ongoing effort to keep TDG levels in the DWR tailrace as close as possible to 110% saturation while avoiding water quality exceedances.

Dave Statler, Nez Perce Tribe, asked how the 300 kaf increase in the forecasted water supply at DWR is related to snowpack depth. He expressed concern about overestimating the water supply and releasing too much from Dworshak in relation to

changing climate patterns. The reason the water supply forecast increased significantly between March and April is the amount of snow in the basin, Hall replied. Most of that is high-elevation snowpack; lower elevation snowpack has already run off. The COE forecasting model is based on the water content of remaining snowpack, not depth.

Charles Morrill, Washington, asked about the difference between the RFC forecast and the COE's forecasting method. Hall said the two forecasts use different methodologies but they are similar this year, which builds confidence in their accuracy. Statler asked whether the flood control curve is largely driven by local or system flood control; Hall said system flood control is the driver.

4b. Fish. Paul Wagner, NOAA, reported. *Adults:* The most recent daily (4/5) count for spring Chinook passing at BON is 154 adults, with a cumulative count of 706 which exceeds the 10 year average of 698. Steelhead passage at BON are 2,981 to date, which is in line with the 10 year average. At Lower Granite, adult steelhead passage is 4,314 which is 70% of the 10 year average. Wild steelhead counts at LGR are 2,269, which is 115% of the 10 year average. These percentages follow a general trend of better wild steelhead returns than combined wild and hatchery steelhead returns.

Juveniles: The yearling Chinook passage index at Lower Granite Dam is 129,000 fish to date. The passage index for this week is at Lower Granite Dam is between 13,000 and 9,700 juveniles which is relatively high for this time of year. Counts at the White Bird trap are between 3,868 and 1,500. Yearling Chinook counts are 1,161 at BON and 1,420 at JDA. At Lower Granite Dam PIT detections indicate that there are 33% wild yearling Chinook relative to hatchery yearlings; usually the average is around 20%. This could be the result of a sampling issue, or it could mean the wild run is strong. Juvenile sampling is on hold at LGS due to holes in a pipe that will be repaired this week. Steelhead juvenile counts are picking up, about 15% of them wild and 85% hatchery. Lamprey counts at BON and JDA are slowly increasing. JDA seems to be a stellar site for juvenile lamprey passage this year.

4c. Water Quality. Scott English, COE, reported. Spill on the lower Columbia projects will start April 10. Spill on the lower Snake has started and the projects are operating well in terms of water quality monitoring, with the exception of DWR. The COE is updating erroneous values at DWR based on observed values. Tom Lorz, CRITFC/Umatilla, asked when LGS will return to its normal spill pattern. Baus did not provide a date but indicated an FPOM update regarding this issue will be forthcoming.

4d. Power. There was nothing to report today.

5. Next TMT Meeting

TMT will meet next in a conference call April 13.

Name	Affiliation
Julie Ammann	COE
Paul Wagner	NOAA
Tony Norris	BPA
Doug Baus	COE
Tory Hines	DSC
Scott English	COE
Karl Kanbergs	COE
Michelle Yuen	COE
Erick Van Dyke	Oregon

Phone:

Charles Morrill	Washington
Brian Marotz	Montana
Lisa Wright	COE
Sheri Sears	Colville Tribe
Mary Mellema	BOR
Jen XX	X Tribe
Steve Hall	COE
Laura Hamilton	COE
Alfredo Rodriguez	COE
Michael Bryant	CBB
Tom Iverson	Yakama
Laura Berg	Energy News Data
Dave Benner	FPC
Paula Calvert	ODEQ
Russ Kiefer	Idaho
Dave Statler	Nez Perce
Jim Litchfield	Montana
Tom Lorz	CRITFC/Umatilla