

COLUMBIA RIVER TECHNICAL MANAGEMENT TEAM

April 15, 2020

DRAFT 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.nwdwc.usace.army.mil/tmt/agendas/2020/>.

Review Meeting Summary

TMT members approved the facilitator's summary from the April 8 meeting. Official minutes from April 8 will be reviewed at the next TMT meeting.

TDG and Flex Spill Update

Dan Turner, Corps, reported that spill on the Columbia River started last week; river flows are low and projects are operating at minimum generation, spilling the rest. TDG levels in the Columbia River are below the 125% criteria. The Snake River has similar low flows, with minimum generation and spill the rest for 16 hours out of the day during gas cap spill, and some lower spill rates during performance standard spill hours. A powerhouse outage at Little Goose on April 13 (due to line maintenance and an unavailable unit) caused a slight bump up in spill and TDG; TDG levels remained well below the state water quality criteria.

Also, as noted at the last TMT meeting, concerns around holding DEC reserves at John Day were discussed at the Flex Spill Working Group this week.

Dan noted that the Warrendale gage below Bonneville Dam is showing higher TDG concentration than the Cascades Island gage, which is the opposite of what is typically observed. The Warrendale gage is reporting around 120% TDG. It appears that there is a source of TDG on the system at Bonneville not being captured by the Cascades Island gage, it could be from the corner collector.

- **ACTION:** Salmon Managers and Action Agencies were encouraged to look into the TDG issue further and report findings back at the next TMT meeting.

Dan shared that the incoming spill bay data for Lower Granite is now correct, although Little Goose seems to be having the same issue. The Corps is working on the issue to get it resolved, and will update the TMT when it is functioning properly.

Tony Norris, BPA, reported that flexible spill is being utilized where possible. There is no flex spill at The Dalles, and Bonneville is spilling 100 kcfs with the project at minimum generation.

Chum Incubation and Emergence Operation

Doug Baus, Corps, reported that the chum incubation and emergence operation will end on April 20 at 2359 hours, as requested in SOR-2020. The current operation holds the Bonneville minimum tailwater elevation to 12.5 at all hours. The Bonneville tailwater elevation at 0500 hours on April 15 was 12.8 feet. The 10-day RFC forecast shows a gradual increase of inflow ranging from 140-165 kcfs by the end of the 10-day period.

Operations Review

Reservoirs: Joel Fenolio, BOR, reported on Bureau of Reclamation projects:

- **Hungry Horse:** midnight elevation was 3,523.9 feet, and the project is currently dropping to get below FRM elevation of 3,522.8 feet by end of month.

- **Grand Coulee:** midnight elevation was 1,249.4 feet, and the project is operating to support chum below Bonneville. The project has been passing inflows 61-62 kcfs over the last 5 days.

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

- **Libby:** midnight elevation was 2,403.2 feet, with average inflows of 3.5 kcfs, and outflows of 4 kcfs;
- **Albeni Falls:** midnight elevation was 2,053.2 feet, with average inflows of 14.4 kcfs, and outflows of 10 kcfs;
- **Dworshak:** midnight elevation of 1,530.1 feet, with average inflows of 6.2 kcfs, and outflows of 7.1 kcfs (increased outflow for hatchery releases April 7-20);
- **Lower Granite:** average outflows of 54.9 kcfs;
- **McNary:** average outflows of 135.1 kcfs; and
- **Bonneville:** average outflows of 147.4 kcfs.

Water Quality: Dan had nothing further to report.

Fish: Paul Wagner, NOAA, reported an increase in adult spring Chinook passage at Bonneville, with 667 YTD, an increase from last year at this time but still under the 10-year average. Steelhead YTD passage is 92% of the 10-year average, and unclipped steelhead passage is 100% of the 10-year average. Paul noted that these may be winter steelhead.

For juveniles, yearling Chinook are picking up at Lower Granite with passage at 21,000, and also continue to show at Little Goose, Lower Monumental, McNary, and Bonneville. Juvenile steelhead are also passing the tributary projects, with a passage index at Lower Granite of 60,000, and passage at Little Goose, McNary and Bonneville as well. The sub-yearling release at the Spring Creek Hatchery resulted in a big bump in numbers at Bonneville.

Paul noted that the new PIT-tag detection in the Lower Granite spillway weir is detecting a lot of fish as the RSW is more efficient at lower flows when spill percentage is high. The difference between what's detected in the powerhouse passage versus spillway passage could provide valuable insight in the future tracking.

- **ACTION:** In response to a question on the use of adult delay tracking tools, Paul will check in to make sure the DART passage indicator tool will be operating this year; Dave Swank, USFWS, will check on the FPC tool.

Power System: Tony noted moderate temperatures resulting in moderate loads on the system.

The next TMT meeting is a conference call on April 22nd at 9:00 AM.

This summary is respectfully submitted by the DS Consulting Facilitation Team. Suggested edits are welcome and can be sent to Colby at colby@dsconsult.co.

Columbia River Regional Forum

Technical Management Team DRAFT OFFICIAL MINUTES

April 15, 2020

Minutes: Melissa Haskin, BPA (contractor, FLUX Resources)

Today's TMT meeting was chaired by Doug Baus, Corps, and facilitated by Emily Stranz, DS Consulting. Due to COVID-19, today's meeting was conducted via conference call and webinar. See the end of these minutes for a list of attendees.

1. Meeting Minutes

The facilitator's summary for 4/8 was approved. The official minutes for 4/8 will be reviewed at the next TMT.

2. TDG and Flex Spill Update - Dan Turner, Corps, and Tony Norris, BPA

Dan Turner, Corps, reported on spill operations. Spill on the lower Columbia River began last week. Flows are low and many projects are operating at minimum generation and spilling the rest, and TDG is below the 125% standard. Last week, an unscheduled TMT was called to discuss holding reserves at John Day. The issue has been elevated to the Spill Agreement Team. . On the Snake River, flows are also low and projects are running at minimum generation and spilling the rest for at least 16 hours per day, then spilling at the performance standard levels for up to 8 hours per day.

At Little Goose, there was a powerhouse outage due to line maintenance on April 13. This caused a slight bump in daily average spill and TDG, though it was below the 125% criteria.

In past years, the Cascades Island gage in the Bonneville Dam tailrace has often read higher than the Warrendale gage. Currently, that is opposite – Warrendale is reporting higher TDG than Cascades Island (120% currently). Turner said that it appears there is a source of TDG at Bonneville Dam that is not being captured by the Cascades Island gage. Erick Van Dyke, OR, expressed that he hopes this is looked into further, especially if the corner collector could be the issue. Tony Norris, BPA, noted that with only 30 kcfs coming out of the powerhouse, there could be less mixing than is normally observed.

Last week, Tom Lorz, Umatilla Tribe/CRITFC, noted that spillbay data was not coming in correctly for Lower Granite. Turner reported that the issue seems to also be happening at Little Goose. For now, Lower Granite has been fixed but Little Goose is still reporting issues. Turner does not know when the issue will be resolved but will report back to TMT.

Norris reported on flex spill hours. BPA is utilizing flexible spill where it can. There is no flex spill at The Dalles and Bonneville is spilling at 100 kcfs and the project is at minimum generation.

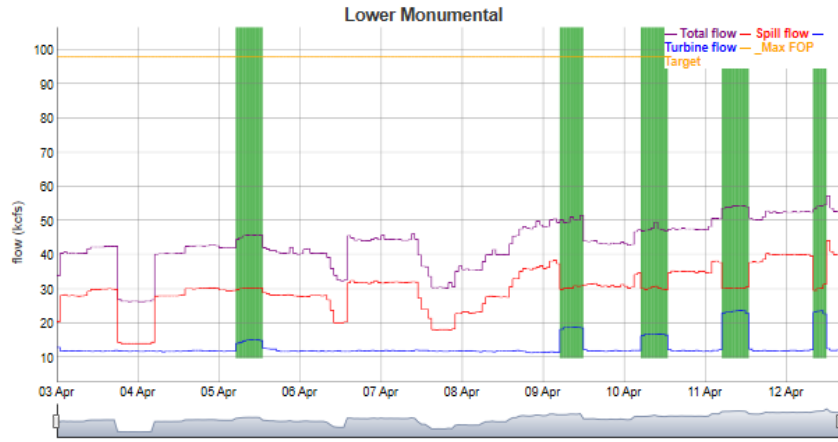


Figure 1, Flex Spill at Lower Monumental April 4-12.

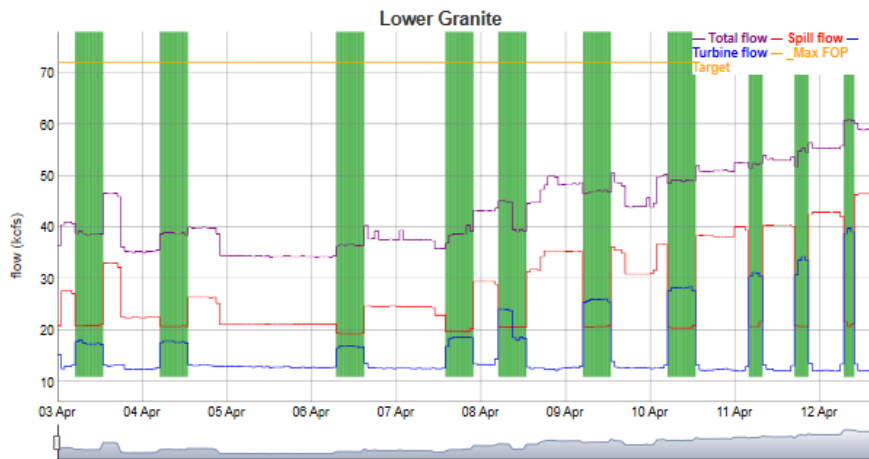


Figure 2, Flex Spill at Lower Granite April 4-12.

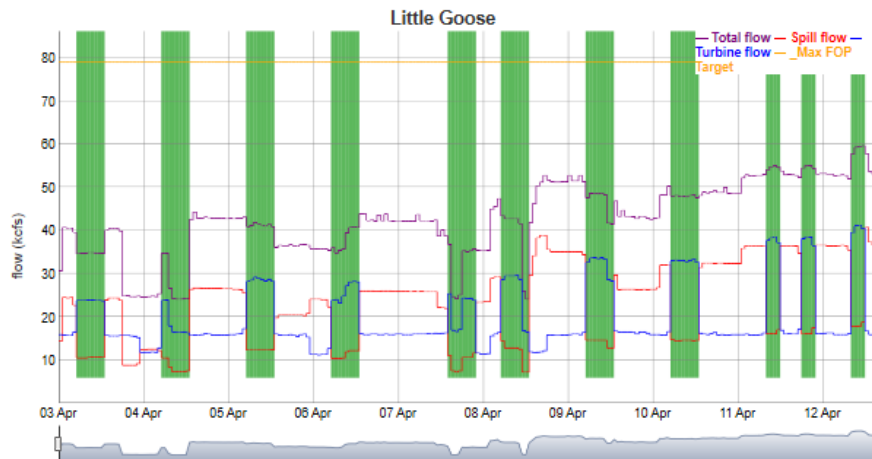


Figure 3, Flex Spill at Little Goose April 4-12

3. Chum Incubation Operation. Doug Baus, Corps

In December, TMT coordinated an 11.3 ft. minimum tailwater at Bonneville Dam at all hours for chum incubation. At the April 8 TMT, the Action Agencies agreed to implement SOR-2020-1. Effective, Thursday, April 9, at 2200 hours, through Monday, April 20 at 2359 hours, the Bonneville Dam tailwater elevation minimum will be 12.5 feet during all hours. This will be the last chum update for this year. Today, at 0500 the tailwater was tailwater 12.5 ft. The RFC 10-day inflow forecast calls for increasing inflows of 140 kcfs to 165 kcfs at the end of the 10-day period.

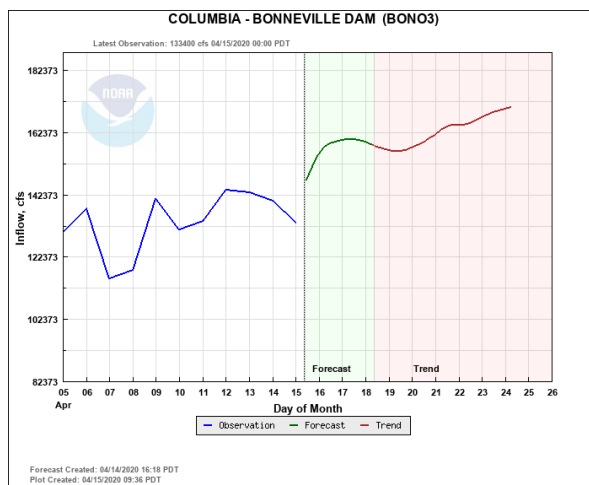


Figure 4: Inflow forecast for Bonneville Dam April 15-24.

4. Operations Review

4a. Reservoirs – Joel Fenolio, Reclamation; Lisa Wright, Corps

Hungry Horse – Midnight elevation was 3,523.9 ft. Reclamation is targeting 3,522.8 ft. by the end of April for FRM and expects to get there quickly and is pre-drafting in case of increasing inflows if temperatures rise.

Grand Coulee – Midnight elevation 1,249.4 ft., passing inflow at ~61-62 kcfs over the past 5 days.

Libby Dam – Midnight elevation 2,403.2 ft., yesterday’s average inflows 3.5 kcfs and outflows were 4 kcfs.

Albeni Falls – Midnight elevation 2,053.2 ft., inflows 14.4 kcfs and outflows 10 kcfs.

Dworshak Dam – Midnight elevation 1,530.1 ft., yesterday’s average inflows 6.2 kcfs and outflows were 7.1 kcfs. Increased outflows are being provided through April 20 for the hatchery release.

Lower Granite – Yesterday’s average outflows were 54.9 kcfs.

McNary Dam – Yesterday’s average outflows were 135.1 kcfs.

Bonneville Dam – Yesterday’s average outflows were 147.4 kcfs.

4b. Water Quality – Dan Turner, Corps

No additional report.

4c. Fish – Paul Wagner, NOAA

At Bonneville, there is an increase in adult Chinook passage with daily numbers at ~105 and a YTD of 667 – better than last year but short of the 10-year average. Steelhead are continuing to pass – 2,715 YTD, of which 799 are unclipped. Looking at the 10-year average, numbers are on par (92% of the 10-year average for total steelhead and 100% for unclipped). Paul Wagner does not expect this to continue. Most of the steelhead will pass later in the year.

With juveniles, the passage index has yearling Chinook picking up the pace at Lower Granite with an index of 21,000 yesterday. They are showing at downstream projects as well. Steelhead are passing as well, the Lower Granite passage index yesterday was 60,000. Little Goose also had a bump, as did McNary. Some were detected at Bonneville as well. The Spring Creek Hatchery releases resulted in a big bump at Bonneville with numbers as high as 530,000 in one day. The new PIT-tag detection array in the Lower Granite spillway weir (RSW) is detecting a significant amount of fish. The RSW has a tendency to be even more efficient at lower flows when spill percentage is high, reported Wagner. These data will be very informative.

4d. Power – Tony Norris, BPA

Tony Norris, BPA, reported on the power system. Temperatures have been moderate, as have loads.

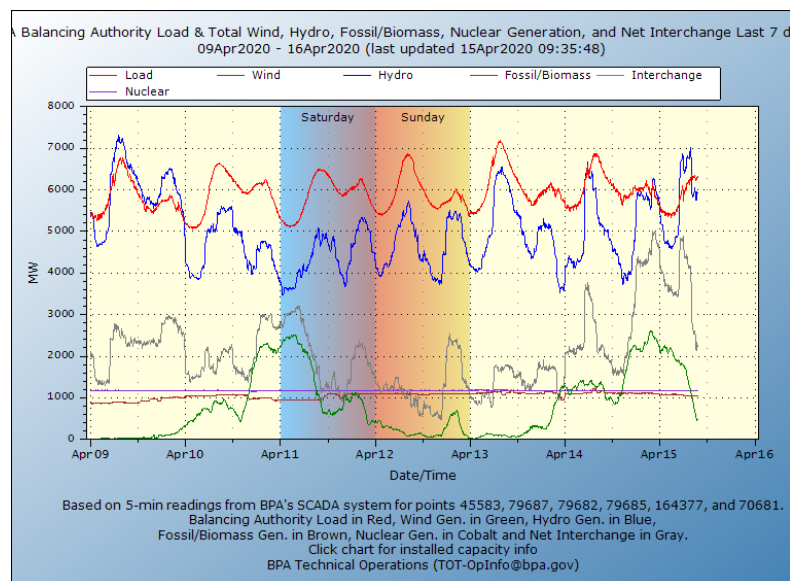


Figure 4: BPA Balancing Authority Load and Generation for the last 7 days, April 9-16.

5. Next TMT

The next TMT meeting is call on April 22 at 9 a.m.

Today's Attendees:

Agency	TMT Representative
Army Corps of Engineers	Doug Baus (Chair), Lisa Wright, Julie Ammann
Bonneville Power Administration	Tony Norris, Scott Bettin
Bureau of Reclamation	Joel Fenolio
NOAA Fisheries	Paul Wagner
US Fish & Wildlife Service	Dave Swank
Washington	Charles Morrill
Oregon	Erick Van Dyke
Idaho	Jonathan Ebel
Montana	Jim Litchfield
Nez Perce Tribe	Jay Hesse
Umatilla Tribe/CRITFC	Tom Lorz
Colville Tribe	Sheri Sears
Warm Springs Tribe	N/A
Kootenai Tribe	N/A
Spokane Tribe	N/A

Other Attendees (non-TMT members):

Army Corps of Engineers – Dan Turner, Aaron Marshall, Jon Roberts, Chris Peery

DS Consulting – Emily Stranz (Facilitator), Colby Mills

BPA – Melissa Haskin (CONTR, FLUX Resources, Note taker)

Yakama Nation Fisheries – Tom Iverson

Snohomish PUD – Mike Shapley

Portland General Electric – Ruth Burris

Oregon DEQ – Paula Calvert