

COLUMBIA RIVER TECHNICAL MANAGEMENT TEAM

August 3, 2011

Facilitator's Summary

Facilitator: Robin Gumpert

The following notes are a summary of issues that are intended to 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.

Announcement

After a round of introductions, Karl Kanbergs, COE, announced that Bill Proctor will serve as Interim RCC Chief for the COE. He has served as Team Leader for the Hydrologic Engineering Team in the Columbia Basin Water Management Division since 2009.

Meeting Minutes

The TMT web page was experiencing technical difficulties, so TMT will finalize the 7/27 TMT meeting Official Minutes and Facilitator's Notes at the next meeting. (This will be completed at the scheduled 8/17 face-to-face TMT meeting.)

Dworshak Operations

Gunnar Leffler and Steve Hall, Walla Walla District COE, shared an update on Dworshak operations and the latest temperature modeling results. Lower Granite temperatures had increased to about 66 degrees and were anticipated to stay there, based on the available water quality models, for the next week to ten days before increasing closer to the 68 degree threshold. Outflows from Dworshak were currently 14.2 kcfs and 48 degrees.

Paul Wagner, NOAA, said FPAC had discussed this issue during their call yesterday and recommended that the COE reduce temperatures to 45 degrees to be proactive and stay ahead of rising temperatures at Lower Granite. This was acceptable to the hatchery so long as TDG levels did not exceed 110%. The COE responded that to do this, they would need to run some spill through the ROs which could result in higher TDG levels. However, the cooler temperatures will also influence TDG so it was not certain what the actual response would be to this change. The COE was in the process of modeling the temperatures at Lower Granite that would result from a change to 45 or 43 degree water coming out of Dworshak. The USFWS reiterated the desire of the hatchery to not exceed 110% TDG, and Oregon stated its preference not to reduce flows to achieve the lower temperatures.

After further discussion, TMT members present generally agreed that the COE should be guided by three criteria: provide cooler water now; maintain current flows to the extent possible; and do not violate 110% TDG standards. The COE added a fourth parameter, to minimize frequent changes to spill through the ROs, as these changes could have damaging effects on the seals of the RO gates.

Action/Operating Plan: The COE planned to shift some spill to the ROs to achieve a lower outflow temperature at the project, effective today. The agency will share the results of the latest modeling efforts with TMT as soon as they are available. Unless the TDG cap is exceeded, this operation will continue until the next TMT check in on 8/10. If a deviation from the plan will be required due to excessive TDG or other unforeseen issues, the COE may reconvene TMT to discuss next steps for the operation.

SOR 2011-04

Sue Ireland, Kootenai Tribe, presented a request to minimize outflows at Libby in September and October to support a habitat restoration construction project on the Kootenai River. She said this request had come forth after thorough regional coordination around the Kootenai Conservation and Restoration Plan and the Bull Trout BiOp. This project would be the first phase of a Master Plan for the Kootenai River. The specific flows requested in the SOR were for 6 kcfs bull trout minimums in September and 4 kcfs minimums in October. She added the desire for certainty around this operation now as the project begins, and also added that there may be some flexibility around the actual low flows; the intent is for them to be consistent and low while dewatering occurs for construction. She offered to share photos and other updates on the project as it develops. One TMT member suggested that a report on the construction work could be shared at the TMT Year End Review in December.

The COE's Kristian Mickelson (Seattle District) shared a set of operating scenarios developed in anticipation of this request. Each scenario showed Libby increasing outflows to 16 kcfs today; then reducing outflows to about 14 kcfs on August 15 as required due to maintenance and unit outages already scheduled at the project; followed by a ramp down to flat flows, starting August 31 and using allowable ramp rates – the flat flow shown in each scenario varied based on varying inflow predictions per the STP and ESP model runs, and showing Libby reaching a BiOp target elevation of 2449' by the end of September. To meet this latter objective, the flat flows in September might be higher than was requested by the Tribe. In all scenarios the project would hit 2449' elevation on September 30.

TMT members explored different options for shaping flows at Libby to meet the request: 1) Extend 14 kcfs further in to September, then ramp down to 6 kcfs for the remainder of the month; 2) Increase flows today to greater than 16 kcfs to get more water out and provide better assurance for meeting the low flow targets specified for September and October and the target elevation; or 3) allow the 6 kcfs flat flow in September as specified in the request drive operations rather than trying to meet the September 2449' elevation objective.

To option 1), Sue said she would need to check in with the project to determine if this would be acceptable. She noted that likely the project would proceed if the flat flow was 6.8 kcfs as predicted in one of the COEs' operating scenarios. She expected work to begin just after Labor Day weekend. To option 2), Montana and the Kootenai Tribe said they would not prefer bumping flows up beyond 16 kcfs as this could be detrimental to resident fish. To option 3), there is a requirement in the BiOp to reduce the project

elevation to 10' from full; that said, if the project reaches that elevation in August and the region does not object, this could be a viable operating plan.

TMT members were polled on their level of support for the COE's proposed Libby operation that would meet the request described in SOR 2011-04:

Increase outflows today to 16 kcfs; ramp down to 14 kcfs on August 15; ramp down on August 31 to a flat flow of about 6 kcfs or slightly higher, using ramp down rates to get to that flat flow; hold the flat flow through September; and ramp the project down further in October to a flat flow of about 4 kcfs.

- Oregon – Does not object to implementing the operation for now; needs to check with policy to determine if the deviation from the BiOp (meeting elevation 2449' in September) is acceptable. *NOTE: A follow up email was sent to the COE from Rick Kruger to the effect that Oregon does not object to the Corp's proposed operation in order to implement SOR 2011-04 with the understanding that the Corps would make best efforts to draft Libby to 2449' by August 31 and may be higher or lower than 2449' by the end of September.
- Montana – Supports this operation to meet the request and believes it is a good plan. Would prefer to meet the specified 6 kcfs flat flow in September at the risk of the reservoir ending above or below the 2449' target at the end of September.
- Washington – No objection to the proposed operation to meet the request.
- Idaho – Supports the operation and SOR, and believes this will be a better operation for anadromous and resident fish. Suggest choosing a flat flow that is acceptable to all needs of the region (habitat construction, bull trout minimums and 2449' end of September elevation) to the extent possible.
- NOAA – No objection to the proposed operation to meet the request.
- USFWS – Supports the operation plan and request.
- BPA – Supports the operation and request.
- Reclamation – Supports and believes this is a reasonable operation to meet the request.
- *Nez Perce – was not on the phone today, but a follow up email exchange between the COE and the Tribe indicated that the Nez Perce Tribe does not object to increasing flows at Libby to 16 kcfs to support the request.

Action/Operation Plan: The COE planned to increase outflows at Libby today to 16 kcfs and to operate the project through the month and in September and October to meet the needs specified in the request. The COE will monitor conditions closely and continue to coordinate with the region on this operation as the season progresses. The COE will also contact other sovereign parties that were not available on the call today to engage their input and level of support for the operation. (*Karl Kanbergs, COE, later reported that no objections were received). TMT will revisit this operation during a conference call next week, 8/10.

Sue Ireland thanked TMT for their thoughtful discussion and support for the Tribe's request. She will update TMT on progress of the habitat construction project later in the year.

Operations Review

Reservoirs: Ted Day reported on Reclamation projects. Hungry Horse was at elevation 3559.16' with 4 kcfs outflows and 4.5 kcfs inflows. Flat flows will continue at the project until it reaches elevation 3550' at the end of September. Grand Coulee was at elevation 1289.9'. Banks Lake will begin drafting very soon. Upper Snake flow augmentation is underway and going well. Also, Ted added that since April, Upper Snake flow totaled 2.6 MAF for flood control – much more than normal. Karl Kanbergs reported on COE projects. Libby was at elevation 2453.18' with 17.9 kcfs inflows and 14 kcfs outflows. Albeni Falls elevation, as measured at the Hope gage on Lake Pend Oreille was at 2062.1' with 26.2 kcfs inflows and 27.1 kcfs outflows. Dworshak was at elevation 1583.84' with 3.4 kcfs inflows and 14.1 kcfs outflows. TDG was hovering around 109.1%. Lower Granite flows were 51.5 kcfs; the June 21-July 31 average was 113 kcfs and the project is expected to exceed its summer flow objective, currently forecast to come in at near 80 kcfs, for the period June 21 through August 31. Likewise McNary is expected to exceed its summer flow objective – flows were 217.9 kcfs yesterday, with a summer average flow of 321 kcfs from June 1 through July 31 Finally, Karl reported that outages at Lower Granite and Little Goose were ongoing, as coordinated through FPOM.

Fish: Cindy LeFleur, Washington, reported on the adult forecasts and said she would provide graphs at an upcoming TMT meeting. The Fall Chinook forecasted return is 766,300 (higher than last year's actuals); upriver bright returns are forecasted at 399,600 (also higher than last year's actuals) and of those, 17,500 wilds were expected to return. Spring Creek hatchery adults are forecasted at 116,400 (down from last year); Mid-Columbia bright returns are forecasted at 100,300 (above last year's actuals); the Bonneville dam adult Chinook count is predicted to be over 500,000; so far 900 have been observed. Finally, 391,000 upriver summer steelhead are predicted to return – this number is close to last year's actual count.

Paul Wagner, NOAA, reported on the juvenile migration. Subyearling Fall Chinook counts at Lower Granite were about 5,000/day and about 100,000/day at McNary (this count was much higher than seen in previous years on this day). Lamprey continue to pass in small numbers – 10-30/day at Lower Granite and in the 100's/day at John Day. It was noted that most of these counts are of non-migrating lamprey.

Power system: Nothing to report.

Water quality: Scott English, COE, reported that the tailwater gauge at Bonneville will be back on line in August. Some TDG exceedances have occurred in the system due to involuntary spill, but generally the system had calmed down since the last report. The July water quality report will be available at the next TMT meeting.

Next Meeting – Conference Call, 8/10

Agenda items include:

- Dworshak Operations Update
- Libby Operations Update

- Lower Granite Survey Status Update

Next Face to Face Meeting, 8/17

Agenda items include:

- Dworshak Operations
- Lower Granite MOP Operations/Survey Results Update
- Libby Operations
- Operations Review
- Other?

Columbia River Regional Forum
TECHNICAL MANAGEMENT TEAM OFFICIAL MINUTES

August 3, 2011
Notes: Pat Vivian

1. Introduction

Today's TMT meeting was chaired by Karl Kanbergs, COE, and facilitated by Robin Gumpert, DS Consulting. Representatives of NOAA, the COE, Montana, USFWS, Oregon, BOR, BPA, Washington, Kootenai Tribe and others attended. This summary is an official record of the proceedings, not a verbatim transcript. Any questions or comments should be directed to the TMT chair.

2. Review Meeting Minutes for July 27

Review of meeting minutes and facilitator's notes was postponed because the TMT website was malfunctioning.

3. Dworshak Operations

The Lower Granite tailwater is expected to hover around 67 degrees F for the next few days, which is close to the 68 degree criterion, Gunnar Leffler, COE, reported.

Paul Wagner, NOAA, reported that FPAC reached consensus yesterday on a recommendation to reduce Dworshak outflows to 45 degrees F which would reduce Lower Granite temperatures and still accommodate Dworshak hatchery operations. The COE has modeled the effect of 43-degree releases from Dworshak on temperatures downstream, but those modeling results are not yet available, Steve Hall, COE, reported.

In light of current temperatures, the COE believes it's prudent to reduce Dworshak outflow temperatures to 45 degrees F. Further discussion clarified that in order to reduce the temperature of Dworshak releases to 45 degrees F, the COE would have to switch some volume from the spillway to the RO gates. All 3 units are already in undershot mode, releasing the coldest water available. The COE expects that switching to the RO gates will raise the TDG values of Dworshak releases. The RO gates are not designed for frequent repositioning, so following the gas cap closely would put them at risk of failure during spill season, Hall said.

CEQUAL 2 modeling indicates that Lower Granite tailwater temperatures will reach 68 degrees sometime around August 15-17. Hall said he will email the temperature modeling results to TMT as soon as they are available. The COE will also coordinate this operation with the Nez Perce Tribe and the BOR which were not represented today. BOR joined the meeting after this point.

When the temperature modeling results are available, the COE will look at the effects of shifting a percentage of spill from the spillway to the RO gates on TDG production, Kanbergs said. If there is less total flow as a result of keeping TDG levels down, that would affect the target elevation at the end of September. The COE will do its best to reduce Dworshak outflows to 45 degrees F without violating the gas cap, Hall said.

There was no official poll on Dworshak operations today. TMT members present gave their views. Based on today's discussion, the COE will reduce temperatures and let TMT know if anything changes.

- **Oregon** – Does not want a reduction in total flows in order to reach the end of September elevation at Dworshak. There was consensus at FPAC that reducing temperatures in the Lower Granite tailwater should be done sooner rather than later.
- **NOAA** – Reducing temperatures is important because there's a strong relationship between cooler temperatures at Lower Granite and increased survival. Sooner is better than later because we won't know until we do it.
- **Montana** – Asked for clarification of the operation. Agrees with NOAA.
- **Washington** – No objections to the proposed operation.
- **BPA** – Defers to the COE on this operation.

4. Kootenai Tribe SOR 2011-04

Sue Ireland, Kootenai Tribe, presented SOR 2011-04, which requests minimum outflows from Libby Dam to accommodate sturgeon habitat restoration in the Kootenai River basin. The request for 6 kcfs outflows in September (bull trout minimum) and 4 kcfs in October will likely provide the lower flows the tribe needs to proceed with a contract for phase 1 of the Braided Reach portion of the Kootenai River Habitat Restoration Project.

Ireland clarified that 6 kcfs in October, rather than 4 kcfs as stated in the SOR, would likely be sufficient. The COE noted that 4 kcfs, or project minimum is generally the normal outflow for much of October. This is the first in what will be a series of requests from the tribe to accommodate habitat restoration according to a master plan developed in 2009 in collaboration with regional stakeholders. Jim Litchfield suggested the tribe give a presentation on its habitat restoration work at the TMT year-end review. TMT moved from discussion of the SOR itself to the requisite operations at Libby.

5. Libby Operations

TMT considered the effects of supporting SOR 2011-04. Current Libby outflows are 14 kcfs. The COE has an operational goal of getting the reservoir to 2,449 feet by the end of September, based on a 10-foot draft from full per RPA 4 of the BiOp, Kanbergs said.

Kristian Mickelson, COE Seattle, presented slides of COE modeling results in light of the Kootenai Tribe's request to go to minimum bull trout flows at Libby. Libby inflow estimated used are from latest STP data and the latest ESP runs.

Based on the modeling results, the COE proposed to raise outflows to 16 kcfs today through August 15, then drop to 14 kcfs out through August 31 with the goal of reaching 2,449 feet by end August instead of September. The drop to 14 kcfs or perhaps to as high as 14.5 kcfs if needed is because of scheduled unit outages restricting total available output, Kanbergs explained. On August 31 the operation would then ramp down to 12 kcfs and then follow ramp rates to flat flows to accommodate the restoration work.

Flows out of Libby are expected to be around 6.8 kcfs in September under these scenarios, Mickelson said. Litchfield asked whether that would be acceptable, and suggested that outflows could simply be set at a flat 6 kcfs. Ireland said the tribe does not expect flows to be exactly 6 kcfs. She will ask the construction contractor whether 6.8 kcfs would be a problem. The tribe anticipates that ramping down will begin on August 31 and continue without fluctuations.

Increasing outflows to 16 kcfs today could have negative impacts on the river, Jim Litchfield, Montana, said. There was discussion of the fact that raising flows to meet the BiOp end of September elevation target could impair the tribe's habitat work. COE modeling shows that flows varying from 6 to 9 kcfs (high end based on a rainy September), depending on inflows, would be needed to reach 2,449 feet elevation by end September. Kanbergs told TMT the Libby reservoir elevation could go higher than 2,449 feet if TMT supports this SOR and it rains in September. In that event, should Libby outflows be ramped up to say 10 kcfs to get to 2,449 feet by end September, or should flows be kept low even if it means missing the target?

Tony Norris, BPA, asked how important it is to draft to an elevation when we will probably exceed the flow objective through the end of August, and there are relatively few fish in the river that late in the season. Litchfield agreed, noting that it's more important to commit to dropping flows to 6 kcfs in September for habitat restoration than it is to meet a specified elevation target. Norris asked for information from NOAA regarding the status of the fish migration in late summer.

If the reservoir reaches 2,449 feet by end August instead of end September, that would be fine with NOAA if others agree, Paul Wagner said.

TMT members stated their views of the COE's proposed operation of 16 kcfs out through August 15, then 14 kcfs with the intent of reaching 2,449 feet by end August.

- **Oregon** – Does not object to the proposed operation, but can't agree to it without consulting internally first. In an email to the COE on August 4, Kruger affirmed that Oregon does not object but expected for Libby elevation to be near 2449 feet at the end of August.
- **Montana** – Supports the proposed operation. TMT should agree now to a plan of holding 6 kcfs out through September, then work around whatever conditions arise in Libby reservoir.
- **Washington** – No objection.
- **Idaho** – Supports the SOR as it is, but suggests a slight modification that might win full regional support. By end August, identify a flow amount that is expected to result in 2,449 feet elevation by end September and agree to it.
- **NOAA** – Supports the proposed operation.
- **USFWS** – Supports the proposed operation.
- **BPA** – Supports the SOR and the proposed operation.
- **BOR**- Support for the operation

In light of no objections, the COE will consult with other sovereigns, then proceed with the proposed Libby operation if there are no objections. TMT will revisit Libby operations in its conference call next week on August 10.

6. Operations Review

Reservoirs. Hungry Horse is at 3,559.16 feet, 10 inches from full, with inflows dropping off to around 4.5 kcfs and outflows at 4 kcfs. BOR plans to continue steady releases of 4 kcfs. With further outflow decreases likely necessary. The end of September elevation target is 3,350 feet.

Grand Coulee is at elevation 1,289.9 feet. Banks Lake will stop pumping and draft through the end of August.

Upper Snake: The operation is on target to provide flow augmentation in the upper Snake by August 31. Upper Snake inflows in June and July were 185% of average, the highest for the past 100 years.

Libby is at elevation 2,453.18 feet, with inflows of 17.9 kcfs and outflows of 14 kcfs. Albeni Falls continues to operate within the summer elevation range of 2,062-2,062.5 feet. Current elevation is 2,062.12 feet, with inflows of 26.12 kcfs and releases of 27.1 kcfs.

Dworshak is at elevation 1,583.84 feet, with inflows of 3.4 kcfs and releases of 14.3 kcfs. Of that, 4.6 kcfs is spill. TDG saturation in the forebay is 109.1%.

Lower Granite flows are 51.5 kcfs. Average flows from June 21 to July 31 were 113 kcfs. Based on the current STP, average flows for June 21 to August 31 will be around 80 kcfs. The COE will give TMT an update on the channel surveys for navigation dredging at either the August 10 or August 17 TMT meetings. Lower Granite is experiencing a total powerhouse outage due to BPA initiated work in combination with COE unit maintenance.

McNary flows are 217.9 kcfs. Average flows from June 1 to July 31 were 321 kcfs, with an expected seasonal average of about 260 kcfs – well above the summer flow objective of 200 kcfs.

Fish. Adults: Cindy LeFleur reported. The forecast for Columbia River fall chinook returns is 766,300 fish, compared to last year's return of 657,100 fish. Upriver brights are predicted to have a strong return of 399,600 this year. The Snake River wild component is predicted to be 17,500 fish, compared to 15,400 last year. This continues an increasing trend for these wild fish. Spring Creek Hatchery returns are predicted to be 116,500 fish, compared to 130,800 last year. Mid Columbia brights returning to areas above Bonneville are predicted to be 100,300 fish, compared to 79,000 last year at the river mouth. The Bonneville Dam count of adult chinook could be over 500,000 fish, compared to last year's count of more than 467,000. The largest count of Bonneville adult chinook was more than 610,000 in 2003.

Juveniles: Fall chinook are the main migrants now, Paul Wagner reported. Lower Granite had a bump of 2,000 per day. Little Goose numbers are in the 3,000-4,000 per day range; Lower Monumental, 1,000 fish per day; McNary, more than 100,000 per day; John Day, 30,000; and Bonneville, 30,000. Juvenile lamprey are still passing in small numbers: 10-30 per day at Lower Granite; 10 per day at Little Goose; 100 or so at both McNary and John Day; and less than 100 per day at Bonneville. Kruger said FPAC has discussed the fact that none of these are smolt-type lamprey juveniles.

Water quality. Scott English, COE, reported that TDG levels have calmed down since he last reported. The Bonneville tailrace gage remains out of service and is scheduled for repairs in August. Meanwhile, the COE is using Warrandale gage for analog readings in its daily spill review. There have been minor excursions above TDG with involuntary spill resulting from outages at Lower Granite, Little Goose, Chief Joseph and Grand Coulee dams. English will provide a TDG instance report for July at the next face-to-face TMT meeting.

Power. There was nothing to report today.

6. Next Meeting

A conference call was scheduled for August 10. The next regular TMT meeting will be August 17.

Name	Affiliation
Paul Wagner	NOAA
Jim Litchfield	Montana
Lisa Wright	COE
Kristian Mickelson	COE
David Wills	USFWS
Rick Kruger	Oregon
Dan Feil	COE
Scott English	COE
Richelle Beck	DRA
Ted Day	BOR

Phone:

Tony Norris	BPA
Cindy Lefleur	Washington
Sue Ireland	Kootenai Tribe
Gunnar Leffler	COE Seattle
Dave Benner	FPC
Shane Scott	PPC
Russ George	WMC
Bruce McKay	hydropower consultant
Margaret Filardo	FPC
Russ Kiefer	Idaho
Steve Hall	COE Walla Walla