

COLUMBIA RIVER REGIONAL FORUM

TECHNICAL MANAGEMENT TEAM

July 18, 2007 Meeting

FACILITATOR'S SUMMARY NOTES ON FUTURE ACTIONS

Facilitator: Robin Harkless

Notes: Erin Halton

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.

Review of Facilitator Notes / Meeting Minutes

No changes were made to the facilitator notes or official meeting minutes from the July 11th business meeting and July 13th conference call. Jim Adams, COE, requested that future facilitator notes from a TMT conference call stand as their own document, for better clarity between meeting dates/discussions.

Action: DS Consulting will send the COE the facilitator notes from TMT conference calls as a separate document for posting on the web.

Dworshak Operations

Jim Adams, COE, reported on Lower Snake River temperatures and referred TMT to several updated graphs linked to the agenda. Lower Granite tailwater temperatures were shown to be holding fairly steadily below the 68°F temperature criteria, with one 'touch above' exceedance during the July 1-2 timeframe. Orofino water temperatures were near 80°F, with flows of 2-2.5 kcfs. Inflow temperatures at Anatone were 72-73°F, with flows ranging between 17-25 kcfs. Adams reported that Dworshak went to full powerhouse (9.6 kcfs) at 2200 hrs on 7/15 with all units in undershot mode, outflow temperatures dropped to about 41.5°F. The project achieved its 43°F temperature target by switching one of the small unit's gates to overshot. Cathy Hlebechuk, COE, referred TMT to Dworshak models that showed continued flows of 9.5 kcfs would bring the project to elevation 1535' by the end of August. A shift to 7.5 kcfs for early-mid September would bring the project to 1520' by the end of September.

Mike Schneider, COE, referred TMT to slides linked to the TMT agenda on the latest CEQUAL modeling for the lower Snake River. Travel time through the Lower Granite pool was 5 days and heat gain in the LWG pool ranged from 0.9°F to 1.5°F. Temperature of flow weighted inflow was 18.4°C. Schneider noted that the modeling used 'as of 7/16' air temperature forecasts and that updated forecasts for 7/19-21 were 2-5° lower than previously anticipated. Hlebechuk added that actual flows out of Hells Canyon were running higher than predicted. Paul Wagner, NOAA, said that given the modeling, flows of 9.5 kcfs from Dworshak would likely maintain tailwater temperatures at or below 20°C for the next five days. Russ Kiefer, ID, and Dave Statler, Nez Perce Tribe, said they agreed that flows of 9.5 kcfs should keep temperatures at or below 20°C for the next

several days and Kiefer clarified that Idaho's main concern is the potential higher temperatures for the 7/22-24 timeframe.

Action/Next Steps from 7/11 TMT meeting:

- The COE will continue to operate Dworshak at 9.5 kcfs, targeting temperatures of 43°F to support the hatchery.
- The COE will update their CEQUAL modeling and run scenarios based on continued flows of 9.5 kcfs and, per request and for comparative reference, flows of 12 kcfs.
- The COE will forward modeling results to TMT on 7/20 and there is a placeholder for an 'if-needed' conference call if conditions change drastically prior to the scheduled 7/25 conference call.
- Dworshak operations will be on the agenda for the scheduled 7/25 TMT conference call.

Libby/Hungry Horse Operations

Cathy Hlebechuk, COE, referred TMT to updated operation scenarios, linked to the TMT agenda and noted Libby was releasing 17.3 kcfs. This week's STP model showed total inflow volume in the range of 6.9 MAF at Libby. Paul Wagner, NOAA, gave a brief summary of the 7/17 Regional Executive Call: the decision was made to implement the CRITFC/Nez Perce/OR/USFWS SOR for 2007, as a default BiOP supported operation. Federal executives present at that meeting expressed support for implementing the Montana proposal per the Mainstem Amendment recommendations in the future, and for including discussions of this issue through the Remand process, as it is supported by ISAB review and supports listed fish.

Ice Harbor / Lower Snake Projects Doble Testing

Don Faulkner, COE, reported that the request for 1-2 hour outage to test a large unit at Ice Harbor will be postponed until September, after spill ends. He added that before unit #2's long-term rehab begins, it will have to be run for about 5 minutes, as is standard procedure for flushing fish out of the draft tube before installing stop logs and unwatering. Lower Snake projects will have annual double testing that will not affect spill, but may generate increased TDG levels. Other needed work may be performed at the same time to make use of the outage. Faulkner said that several line outages at Libby will need to be scheduled for September.

BPA Procedures for Power System Emergencies

Robyn MacKay, BPA, followed up on the 7/11 TMT meeting and reminded TMT that BPA welcomes TMT input on their internal emergency procedures document.

Action/Next Steps: TMT members should direct edits/suggestions for changes to the BPA document to Norris.

Operations Review

Reservoirs – John Roache, BOR, and Cathy Hlebechuk, COE, reported on reservoirs. Grand Coulee was at elevation 1287.6' and targeting an elevation of 1278' by 8/31. Hungry Horse was at elevation 3556.2' with outflows holding at 4.4 kcfs. Libby was at elevation 2453.9', with outflows of 17.3 kcfs. Dworshak was at elevation 1583'.

Average flows for the last week were 33.3 kcfs at Lower Granite and 200 kcfs at McNary.

Fish – Paul Wagner, NOAA, reported on juvenile fish: sub-yearling daily passage numbers were consistent and in the 1-3,000 range at all Lower Snake projects. McNary passage had a peak of 515,000 on 7/12, and Steelhead passage was still nearing its end. Smolt predictions for Snake River stocks estimated 90% passage by 7/19.

Cindy LeFleur, WA, reported that adult sockeye passage numbers were poor but that steelhead were still running close to predicted. Dave Statler, Nez Perce Tribe, added that there may be an upcoming effort on deep net sampling of PIT-tagged fish in the Snake and Clearwater Rivers.

Power system – nothing to report.

Water quality – Jim Adams, COE, said that there were no TDG exceedances to report.

Next TMT meeting: Conference Call on Wednesday, July 25th

Agenda items will include:

- Dworshak Operations

**Columbia River Regional Forum
Technical Management Team Meeting
July 18, 2007**

1. Welcome and Introductions

Today's TMT meeting was chaired by Cathy Hlebechuk and facilitated by Robin Harkless, with representatives from COE, BOR, BPA, Montana, Idaho, Washington, Oregon, CRITFC, the Nez Perce Tribe, FPC and USFWS attending. The following is a summary (not a verbatim transcript) of the topics discussed and decisions made at the meeting. Anyone with questions or comments about these notes should provide them to the TMT chair or bring them to the next meeting.

2. Review Facilitator's Notes and Meeting Minutes

All facilitator's notes and meeting minutes to date are posted on the TMT website, Jim Adams (COE) said. He suggested that the facilitator's notes for July 11 and 13 be split into two separate documents. Hlebechuk suggested cross-referencing the two sets of notes where appropriate.

3. Dworshak Operations

Outflows and Temperatures: Temperatures at Lower Granite tailwater dropped on about June 30, holding steadily below the 68 degrees F criteria ever since, Adams said. A corresponding drop in tailwater temperatures has occurred at Little Goose, which is still below the 68 degrees F criteria. A drop in tailwater temperatures at Lower Monumental is probably due to the cool water from Dworshak working its way downstream. However, tailwater temperatures at Ice Harbor have been around 72 degrees F, an indication that the cooling effect is not working all the way down through the Snake. It still could show up, Dave Statler (Nez Perce) and Adams agreed.

Temperatures at Orofino gage have been pushing 80 degrees F, with relatively low flows of around 2 to 2.5 kcfs, Adams said. Temperatures at Anatone gage have been around 72 to 73 degrees F.

Operations: Outflows of 11 kcfs from Dworshak were reduced to full powerhouse, 9.6 kcfs, at 2200 hours on July 15, Hlebechuk said. For several hours on Monday, all gates were in undershot mode, so outflows were around 41 degrees F. At 8 a.m. July 16, the project switched one unit to overshot mode and the effects appeared several hours later. The 43 degree F target for Dworshak outflows is being met.

According to a Dwoshak STP inflow projection of 1.9 kcfs, full powerhouse or 9.5 kcfs outflows can be maintained through the end of August, with an end of

August elevation of 1535 feet, Hlebechuk said. This scenario assumes that Dworshak outflows would drop to 7.5 kcfs throughout the first half of September.

Modeling: Mike Schneider (COE) presented a CEQUAL modeling run that extends existing operations through July 31. His team has been tracking flow weighted inflow temperatures, which are around 18.5 degrees C, and updating the model several times a week. During warm performance periods, they're seeing release temperatures from Dworshak pool vary by as much as a degree and a half C. There is also vertical temperature structuring in the pool, ranging from 24 degrees C on the surface to as low as 17.5 degrees C near the bottom. Flows have been fairly constant, with about 42% of flows in the Snake coming from the Clearwater.

Flows at Anatone fluctuate with the variability of operations at Hells Canyon Dam, Schneider said – the wild card in terms of thermal budgets entering Lower Granite pool. There was extended conversation regarding the contribution of Hells Canyon flows to temperatures in the Snake. Noting an increase in air temperatures at Lewiston since the latest CEQUAL model was run, Kyle Dittmer (CRITFC) suggested updating the modeling results when the latest weather forecast for Lewiston becomes available.

The forecast of Dworshak storage according to CEQUAL modeling differs slightly from the STP forecast, Schneider said. The CEQUAL model shows Dworshak releasing 9.5 kcfs outflows through the end of July. However, there may be as many as four days of 7.3 kcfs outflows required to meet the target elevation of 1,535 feet by the end of August, a finding that differs from the STP model. Both models assumed an average inflow of 1.2 kcfs for the remainder of July and August. Hlebechuk and Schneider will work on resolving the discrepancy.

This week's CEQUAL model assumed a single condition of 9.5 kcfs flat outflows through the rest of July, Schneider said. Hlebechuk noted that 9.5 kcfs isn't a COE recommendation, only a basis for modeling. It provides a relative gage of what could be done differently if needed, Wagner said.

Projections of water temperatures at Lower Granite show release temperatures as remaining fairly flat for the next week to 10 days, Schneider said. That indicates continuing the current level of operations will cause river temperatures to hover around 20 degrees C, Adams said. Schneider noted that STP projections for Anatone were used in the model, assuming that Hells Canyon Dam releases are 11 kcfs.

Hlebechuk pointed out that Idaho Power's forecasted releases have been lower than actuals by around 1-2 kcfs for the past several days. A scenario assuming 11.5 kcfs average discharge from Hells Canyon Dam would be appropriate, Wagner said.

Litchfield suggested running another CEQUAL model showing the temperature impacts of slightly higher Dworshak outflows through July. The Salmon Managers didn't reach consensus on a recommendation for further modeling as of yesterday's FPAC meeting, Wagner and Statler said.

The Salmon Managers agreed on a modeling request for Dworshak outflows of 12 kcfs starting July 23, with an outflow temperature of around 43 degrees C as a test of temperature sensitivities to dam operations. In addition, there was interest in clarifying the Hells Canyon contribution to water temperatures in the Snake, specifically modeling higher Hells Canyon flows.

The Salmon Managers did not see a need to caucus on this issue. Idaho, the Nez Perce, Washington and Oregon representatives agreed on an operation of 9.5 kcfs outflows from Dworshak for the near future, targeting outflow temperatures of around 43 degrees C for the sake of the Federal hatchery. David Wills (USFWS) agreed to that. TMT agreed to a conference call in a week, with a call sooner if the results of updated modeling show a need for meeting sooner.

4. Libby Operations

Assuming an inflow volume of 6.9 maf based on STP projections, maintaining 17.3 kcfs outflows through the end of August will reach elevation 2,439 feet, Hlebechuk said. Litchfield asked if the runoff volume had been updated. It's been 114% of normal for July and probably won't change much, Hlebechuk said. She showed a graph of 15 kcfs out through August. Litchfield noted that's not the Montana proposal and last week's graph depicted it accurately. The change will show up in the end of August and September elevations, Hlebechuk said.

5. Montana Proposal for Libby and Hungry Horse

Paul Wagner provided a summary of yesterday's Federal Executive meeting regarding the Montana proposal. The Federal executives chose the CRITFC/Nez Perce/OR/USFWS SOR for 2007, as a default BiOp supported operation. The Federal executives also strongly supported Montana's operation in the future and through the remand process. The Montana operation has been supported by ISAB peer review of the issue, including the benefits to listed white sturgeon and bull trout upriver.

There was incomplete discussion of the status of Snake River fall Chinook, Statler said. A process issue (lack of a formal resolution authorizing CRITFC to speak on behalf of the lower Columbia tribal councils) blocked their input at the meeting.

Roache noted that the CRITFC SOR differs slightly from the 2004 BiOp in that it recommends flat flows, which the BiOp operation did not. The BOR won't draft Hungry Horse below elevation 3,340 feet. Montana supports that operation, Litchfield said.

6. Ice Harbor Potential Outage/Lower Snake Projects Doble Testing

The annual doble test requires a powerhouse outage for half an hour to an hour, then taking several units off line for several days, ending with another short powerhouse outage, Don Faulkner (COE) said. It doesn't result in loss of spill, but in spill increases in all cases, which has TDG implications. This test was postponed until September per the request of the Salmon Managers at last week's TMT meeting. Faulkner asked the Salmon Managers whether they agree with taking action to flush fish out of unit 2 before putting stop logs in when the test is performed. Idaho and Oregon agreed to the operation and there were no objections.

There will also be several line outages near Libby in September and October for routine maintenance, Faulkner and Henriksen noted.

7. BPA Procedures for Power System Emergencies

Robyn MacKay (BPA) invited TMT members to provide comments on these procedures to Tony Norris. Wagner requested that a discussion of BPA's emergency action priority list be added to an upcoming TMT agenda.

8. Operations Review

A. Reservoirs. Grand Coulee is at elevation 1,287.6 feet, headed toward a target of 1,278 feet elevation on Aug. 31 which is based on the July final forecast for the April-August period at The Dalles, Roache said. Hungry Horse is at elevation 3,556.2 feet, discharging 4.4 kcfs. Libby is at elevation 2,453.9 feet, maintaining 17.3 kcfs outflows. Dworshak is at elevation 1,583 feet. Lower Granite seasonal average flows for the past 7 days were 33.3 kcfs. McNary seasonal average flows for the past 7 days were 200 kcfs.

B. Fish. The subyearling Chinook passage indices show passage in fairly equal numbers passing all the Snake projects, Wagner said. Lower Granite is passing 1,000 to 2,000 fish per day, Little Goose 1,000 to 3,000 fish per day, and Lower Monumental 500 to 1,000 fish per day. Wagner and Litchfield agreed that overall passage on the Snake is ramping down from a peak of around 6,000 fish per day. Steelhead passage is winding down at Little Goose and finished on the lower river. Fall Chinook hatchery releases that were PIT tagged are still passing in small numbers. The overall similarity in upriver and downriver detections is a good sign, indicating that fish are making it all the way to the estuary, Wagner said.

Cindy LeFleur (WDFW) discussed adult fish passage. Summer Chinook are passing at the rate of about 400 to 500 a day. Sockeye are experiencing a poor run this year. The summer steelhead run is slightly better than average.

Litchfield asked, when is the cutoff between spring and summer runs? June 15 in terms of fish management, LeFleur said. Dittmer asked, on what are the passage indices at Lower Granite based? Tagging that reflects the Snake River but doesn't include the Clearwater, Wagner said. The detections involve PIT tags but not coded wire tags.

The Nez Perce Tribe will be conducting deep net sampling on the Clearwater near Lewiston sometime in the near future, Statler said. He recommended a recent article on delayed mortality in the *American Journal of Fisheries Management*. Kruger provided the article on a zip drive, and Hlebechuk will link it to the TMT agenda.

C. Power System. Everything is fine, Robyn MacKay said.

D. Water Quality. There have been no TDG exceedances for awhile, Adams said. Typically, exceedances occur at Camas Washougal gage when there's a combination of heat in the Bonneville forebay with gas from spill. There are times when the COE can't control over this phenomenon, which can happen regardless of spill levels.

13. Next TMT Meeting

Conference calls were scheduled for the next two Wednesdays, July 25 and Aug. 1, mainly to check in on Dworshak operations. The next regularly scheduled TMT meeting in person will be held Wednesday, Aug. 15. This meeting summary was prepared by consultant and writer Pat Vivian.

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