

COLUMBIA RIVER REGIONAL FORUM

TECHNICAL MANAGEMENT TEAM

August 1, 2007 Conference Call

FACILITATOR'S SUMMARY NOTES ON FUTURE ACTIONS

Facilitator: Donna Silverberg

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

As of the TMT call, the facilitator summary and official meeting minutes from the 7/25 conference call had not yet been posted.

Action/Next Steps: Notes from the 7/25 TMT call will be reviewed and finalized at an upcoming TMT meeting.

Lower Snake River Low Flows

Jim Adams, COE, reported that flows in the Lower Snake River had hourly averages in the range of 24-30 kcfs. Lower Granite spill had been fluctuating between 14.2 and 18 kcfs; spill at Little Goose was consistently at 30%; spill at Lower Monumental was fluctuating between 11.8 and 17kcfs, and spill at Ice Harbor was below Fish Operations Plan (FOP) levels with the powerhouse operating at minimum generation. Adams noted that the 2007 FOP did not have spill patterns for Lower Granite below 15.2 kcfs and said that since Snake River flows were low and are expected to continue to decrease, there was a possibility that spill at Lower Granite would drop below 15.2 kcfs. He also indicated that spill patterns for Lower Granite below 15.2 kcfs were developed for use in 2006 and said the COE recommended use of these same patterns in 2007 if spill needed to be decreased to below 15.2 kcfs. Adams also noted that the 2007 FOP specified a minimum spill level at Ice Harbor of 15.2 kcfs. Due to the need to meet minimum generation requirements at Ice Harbor and the low flows in the Snake River, spill levels might need to be reduced to below 15.2 kcfs. Alternatives for this scenario are to either stop spill or to continue to spill at levels below 15.2 kcfs and follow the spill pattern table specified in the FOP. The Corps recommended the latter alternative. The following representatives present on the call provided input on the COE recommendation to follow the FOP specified spill patterns, if necessary, at Lower Granite and Ice Harbor:

- NOAA: no objection
- USFWS: no objection
- BOR: no objection
- BPA: no objection
- ID: no objection
- MT: no objection
- Nez Perce: no comment

- CRITFC: no comment

Action/Next Steps: Spill patterns described in the Fish Passage Plan and utilized in 2006 will be used again for 2007. A suggestion was made to include patterns for low flows in the 2008 Water Management Plan.

Commercial Navigation Issues

Ken Ritter, Shaver Transportation, reported on barge navigation problems in locks at McNary and Lower Granite. He acknowledged operational constraints at McNary Dam and said that there have been near-grounding incidents when spill was at the 40% of total outflow level. Ken Ritter did not have specific information for navigational difficulties at Lower Granite. The COE clarified that there needed to be more discussion time with operators at these projects, to explore a full range of options before a decision could be made. TMT members generated some preliminary options: staying near the 40% level, with reshaping patterns during barge passage; shifting to levels of 50% total outflows; and/or individual configurations for each project while balancing the need to support fish, navigation, and human health/safety.

Action/Next Steps:

- Spill flows at McNary were expected to stay near 40% until the morning of 8/3, when they will rise to 60%.
- Operational options will be explored through discussions at FPOM.
- Towboaters will contact operators as they approach McNary and Lower Granite to inform them of any navigational difficulties.
- The COE will release an issue paper and send TMT members an email describing spill patterns, as soon as they are developed.

Dworshak Operations Update

Jim Adams, COE, reported on Lower Snake River temperatures and referred TMT to several updated graphs linked to the agenda. The Lower Granite pool had stayed below the 68° criteria; flow rates at Anatone were between 14-20 kcfs, Dworshak was at 9.9 kcfs, and Orofino flows were on a downward trend and had dropped to 1.5 kcfs. Dworshak was discharging an average temperature of 43.5-44°. Adams acknowledged that temperature data used in COE modeling was from the 'as of 7/30' forecast; CRITFC suggested using more recent temperature data during TMT discussion of Dworshak operations. Russ Kiefer, ID, noted that part of the difference between the two forecasts discussed was caused by the COE inadvertently referring to the forecast for Culdesac Idaho, instead of Lewiston.

Mike Schneider, COE, referred TMT to slides linked to the TMT agenda on the latest CEQUAL modeling for the Lower Snake River. He noted that flow weighted inflows at Lower Granite had been fluctuating between 19-20° on 7/30-31, but was currently at 18°. Travel time through the Lower Granite pool had increased slightly, to 6 days. Modeling showed shaping results for the base operation: flows at full power house until mid-month, then shifting flows to 7.7 kcfs on 8/16 and reaching an elevation of 1534.8' at midnight on 8/31.

Paul Wagner, NOAA, thanked the COE for preparing modeling results each week and in time for inclusion in FPAC discussions. Salmon Managers supported staying with the base operation for the next week, and suggested revisiting Dworshak operations with a TMT conference call on 8/8.

Action/Next Steps:

- The COE will continue to operate Dworshak at full power house, with a close eye on temperatures. If Dworshak release temperatures go above 45°, other operations may be considered and discussed by TMT during or before the scheduled conference call on 8/8.
- The COE will update their CEQUAL modeling for discussion at FPAC and TMT.
- Dworshak operations will be on the agenda for the scheduled 8/1 TMT conference call.

McNary Transport Update

Paul Wagner, NOAA, on behalf of the Salmon Managers, clarified that transport at McNary would be via truck and would begin on 8/16.

Operations Review

Reservoirs – Jim Adams, COE and John Roache, BOR, reported on reservoirs. Libby was at elevation 2452.1', with inflows of 10.5 kcfs and outflows of 17.3 kcfs. Albeni Falls was at 2062.2', with current inflows of 16.2 kcfs and outflows of 11.5 kcfs. Dworshak was at elevation 1567.5', with inflows of .7 kcfs and outflows of 9.9 kcfs. Hungry Horse was at elevation 3552.47' with outflows at 4.4 kcfs and Grand Coulee was at elevation 1285', and targeting an elevation of 1278' by 8/31.

Fish – Paul Wagner, NOAA, reported on juvenile fish: sub-yearling daily passage numbers continued to decline, with Lower Monumental passage at 23 and Little Goose at 50 on 7/31. McNary passage was at 39,000 on 7/31 and steelhead in the couple hundred per day range. Wagner said adult fish passage was 'hanging in', with summer Chinook in the 300 per day range and steelhead passing Bonneville in the 1,000 per day range. Russ Kiefer, ID, gave TMT members a heads up: a significant number of steelhead smolts seemed to have stalled in the Little Goose pool this year, and he suggested that better means of detection and operations for 2008 be an issue for discussion at an upcoming TMT meeting. He added that the first two summer sockeye adults had arrived in the Stanley Basin!

Action/Next Steps: Steelhead passage at Little Goose will be on the agenda for a fall TMT meeting.

Power system – Nothing to report.

Water quality – Jim Adams, COE, had no TDG exceedances to report. He said that the spill cap at Bonneville was moved up to 160.

Bonneville Testing Outside 1%

Cindy Henriksen, COE, clarified that there would be periods of 15-minutes or less of operations outside 1% at Bonneville while the units were being started. The tests will be in the range below the 1% peak efficiency range, not above. The testing will occur once in the morning and once in the afternoon on 8/12-17, to allow for testing on each unit, including the fish units.

Next TMT meeting: Conference Call on Wednesday, August 8th

Agenda items will include:

- Dworshak Operations
- Navigational Issues Follow-up

**Columbia River Regional Forum
Technical Management Team Conference Call
Aug. 1, 2007**

1. Welcome and Introductions

Today's conference call was chaired by Jim Adams and facilitated by Donna Silverberg, with representatives from COE, USFWS, NOAA, BPA, Montana, CRITFC, BOR, the Nez Perce Tribe and FPC on the line. The following is a summary (not a verbatim transcript) of the discussion and decisions made on the call. Anyone with questions or comments about these notes should provide them to the TMT chair or bring them to the next meeting.

2. Review Meeting Minutes

The facilitator's notes for the July 25 meeting were posted this morning for review, Jim Adams (COE) said. The official minutes for that meeting have not yet been posted. The notes for the July 25 meeting will be reviewed at the next TMT meeting.

3. Lower Snake River Low Flows

Flows in the Snake River have dropped considerably, with hourly flows fluctuating from 24-30 kcfs, Adams said. At frequent intervals the projects are having to go to minimum generation status. At Lower Granite, that means spill is periodically dropping to about 14.2 kcfs. The 30% spill provision at Little Goose is being maintained. Lower Monumental flows are dropping below 17 kcfs on a regular basis.

Adams asked TMT what the COE should do if the river gets down to minimum spill range. Last year, the COE developed patterns for spill at 7.5, 6.5 and 5.5 kcfs stops at Lower Granite. He proposed submitting the same spill pattern to the project this year in case it is necessary to go below the 15.2 kcfs spill level. NOAA, USFWS, BOR, BPA, Idaho and Montana representatives voiced no objection to that plan; the Nez Perce Tribe and CRITFC representatives had no comment. Jim Litchfield (Montana) asked, if these are the low flow patterns, why not just use them as a default instead of asking TMT? The fish operations plan says that when flows get this low, the operation of the project will be discussed at TMT, Adams said. The COE thought it was better to allow TMT to discuss the issue rather than hard-wire something into the plan now that might not work later.

According to the fish operations plan, the minimum spill at Ice Harbor is 15.2 kcfs, which includes spill to the RSW and training spill. The question here, Adams said, is whether 15.2 kcfs is a minimum spill level below which spill

should be turned off? Or should the COE use spill patterns provided in the fish passage plan that go below 15.2 kcfs?

The response is the same as for Lower Granite – go to the lower numbered stops on the spill table, Wagner said. FPAC didn't go over this issue project by project, but said essentially that when flows fall to a given point, the project should continue spilling at lower volumes consistent with the spill table instead of turning spill off to allow refill. The fish passage plan contains spill patterns for stops down from 15.4 to 8.5 kcfs, David Wills (USFWS) said.

There are no outstanding issues at Lower Monumental or Little Goose in terms of minimum spill patterns, Adams said. There were no objections to following last year's plan.

4. Commercial Navigation Issues

There have been navigation problems with barges moving into and out of the navigation lock, particularly at McNary and Lower Granite dams, Adams said. Ken Ritter (Shaver Transportation) described the problem. When spill levels dip below 60%, flows cross from the south to the north side of the channel, making navigation difficult. Around 40% spill at McNary, the barges start having problems moving upstream into the navigation lock. Ritter suggested that additional spill or a flatter spill pattern might alleviate the side currents.

In prior years, tow boaters would notify the project when approaching and spill would be shut down, Paul Wagner (NOAA) recalled. He suggested going to 40% spill on a 60% spill day during the barge passage time, with the barge operators notifying operators when they're approaching the dam. That would be sufficient from the tow boaters' perspective, Ritter said. Lower Granite and Ice Harbor are the problem sites. Dave Wills suggested going to 50% flat spill, rather than alternating 40% and 60% spill for navigation purposes. Adams noted that spill at McNary doesn't actually flow through all the open bays across the channel until flows hit 81 kcfs. An alternate spill pattern might achieve a flatter spill or lower rate of discharge.

The COE and the Salmon Managers need more time to consider the options on this issue, Henriksen said. TMT agreed to discuss it in more detail on a conference call next Wednesday, Aug. 8. In the meantime, the COE will try to get an issue paper out on the subject. The RSWs might interfere with stopping spill, Henriksen said, which means a good alternative would be needed for navigation approaches and departures. In the meantime, tow boaters can call the dam operators prior to their approach.

5. Dworshak Operations

Lower Granite has stayed below the 68 degree criteria, except for early July, Adams said. The cooling effect of Dworshak operations has slowly made its way down the river to Ice Harbor, where the tailwater temperatures are 71-72 degrees F. In terms of temperature input into the Snake, Orofino gage is registering just below 80 degrees F, with flows of 14-20 kcfs out of the middle Snake, and Anatone gage, 73-74 degrees F. Flows at Orofino dropped because discharges from the Clearwater River dropped to 1.5 kcfs and continue to drop.

The weather forecast for the Spokane area shows heat increases later in the week, Adams said. Kyle Dittmer (CRITFC) noted that today's forecast for the Spokane area is 1-2 degrees hotter and suggested the COE update its weather forecast. Russ Kiefer (Idaho) noted that the COE has been using weather data for an area south of Lewiston with an elevation 1,000 feet higher than Lewiston.

The COE is losing some ability to control outflow temperatures at Dworshak, Adams said. Currently there are two units operating in undershot mode and one in overshot mode. Temperatures have slowly started rising and are now around 43.5 to 44 degrees C. Maintaining the current project configuration will cause temperatures to rise slowly. Another option is to switch the one gate that is currently in an overshot mode into undershot. which would probably yield temperatures below the 43 degree F target chosen in previous discussions.

According to the STP inflow forecast, maintaining full powerhouse as long as possible, then shutting down one small unit on Aug. 15 or 16 and going to approximately 7.5 kcfs for the remainder of the season, would take the reservoir to elevation 1,534.8 feet by the end of August. Adams said there are approximately 15 days of full powerhouse remaining and about 15 days of running two units at 7.5 kcfs.

If Dworshak inflows go up to 45 degrees C, it might be time to change gates, Wagner said, but didn't favor using 41-degree water now. Kiefer agreed that the Salmon Managers should be alerted if temperatures reach 45 degrees.

Mike Schneider (COE) presented the latest CEQUAL modeling results. During the last few days, Lower Granite tailwater temperatures have risen to almost 68 degrees F, then began to decline. The surface-oriented releases from the RSW also affect the changes seen in release temperatures. Temperatures rose within the last 24 hours, as CRITFC and Idaho representatives mentioned earlier, outpacing the data used for this model run. Schneider cautioned TMT to be aware of that when reviewing today's results. A decrease in releases from Hells Canyon Dam this past weekend bodes well for the cooling trend in the lower Snake. Schneider presented CEQUAL modeling of two conditions:

1. Maintain powerhouse capacity through Aug. 15 as per the current operation, then step back to two-unit operations on Aug.16 to meet the target elevation of 1,535 feet by end August.
2. As an alternative, step back to two-unit operations this Friday, Aug. 3, and save water for use later this month when conditions may be more severe. This alternative shows slightly warmer water temperatures by as much as 8 degrees C around Aug. 10. Using the water saved could provide up to 0.70 degrees of cooling for 2-4 days later in the month.

This information was provided to FPAC yesterday, and the decision was to maintain the current operation of 9.5 kcfs outflows through Aug. 8, then check in at that time, Wagner said. There were no objections to this operation.

6. McNary Transport Update

Last week's TMT discussion of shutting off the TSWs and initiating transport today was based on incomplete information, Paul Wagner (NOAA) said. The fish operations plan said to adopt a spill pattern that includes the bays where the TSWs are presently spilling. If the spill bays with the TSWs were turned off, no spill pattern has been developed to match that condition. It is not likely the TSWs will be turned off, and their operation creates safety issues for the transport barge operators. Instead of initiating transport, which has been on hold while the TSWs are operating, the preference is to continue spilling through the TSWs and defer transportation until Aug. 16, when truck transportation is scheduled to begin. There were no objections to this operation.

7. Operations Review

Reservoirs: Libby is at elevation 2,452.1 feet, with inflows of 10.5 kcfs and outflows of 17.3 kcfs. Albeni Falls is at elevation 2,062.2 feet, with current inflows of 16.2 kcfs and outflows of 11.5 kcfs. Dworshak is at elevation 1,567.5 feet, with inflows of 0.70 kcfs and outflows of 9.9 kcfs. Lower Granite inflows (7-day average) are around 29 kcfs. McNary flows are fluctuating greatly with a daily average ranging from 146 to 201 kcfs, and a 7-day average of 175 kcfs. Hungry Horse is at elevation 3,552.47 feet, continuing to discharge 4.4 kcfs. Grand Coulee is at elevation 1,285 feet, with an Aug. 31 target elevation of 1,278 feet.

Fish: Subyearling chinook passage indices at Lower Granite continue to decrease, from 800 fish 10 days ago to less than 200 fish now, Wagner said. Little Goose passed 600 fish 10 days ago, compared to 850 on July 31. Lower

Monumental passed 200 fish 10 days ago and 23 on July 31. McNary is still passing a steady stream of subyearlings at around 45,000 per day.

Steelhead are passing at the rate of a few thousand per day at Bonneville, moving up the river to The Dalles and beyond, Wagner said. Low probability of adult steelhead returns to Little Goose is an issue of significant concern, Kiefer said. Apparently a significant portion of the Snake River steelhead run stalled in the Little Goose pool this year. Kiefer and Wagner agreed this needs to be addressed. Kiefer requested that the issue be revived for discussion during the winter months. Meanwhile, two sockeye salmon were trapped in the Stanley basin traps, a male and a female.

Power: There is nothing to report, Scott Bettin said.

Water Quality: There have been no exceedances and flows are so low that none of the projects are near the spill cap except Bonneville, Adams said. The spill cap at Bonneville is 150 kcfs. Camas Washougal gage read TDG levels of 114.1% yesterday.

8. Bonneville Testing Outside 1 Percent

Dave Smith (COE – Bonneville Dam) gave an update on what to expect from this annual test. The 1% excursion would occur as units are started and loading up towards the 1% band. Each unit will stop as they are being loaded and would be on the low end for 15 minutes maximum, and there would be no excursions at the higher end. This means there will be no instances when an individual unit operates at maximum capacity and remains outside the 1% turbine efficiency, Henriksen said. The units will be ramped up into the operating range for just under 15 minutes per unit. They will be tested at the rate of one in the morning and one in the afternoon on beginning on Aug. 11 and will continue from August 13-17 (no testing on Aug 12.).

8. Next TMT Meetings

There will be a conference call on Aug. 8 to review commercial navigation issues and Dworshak operations/temperature control. The next regularly scheduled TMT meeting will be on Aug. 15. This summary prepared by consultant and writer Pat Vivian.

Name	Affiliation
Jim Adams	COE
Cindy Henriksen	COE
Jim Litchfield	Montana
Dave Wills	USFWS
Paul Wagner	NOAA
Ken Ritter	Shaver Transportation

Toby Jacobson
Glen Traeger
Ann Larson
Shane Scott
Kyle Dittmer
John Roache
Margaret Filardo
Bob XX
Mike Schneider
Dave Smith
Tammy Mackey
Paul Wagner
Greg Haller
Russ Kiefer
Scott Bettin

Shaver Transportation
Coral Energy
COE – Walla Walla
NWRP
CRITFC
BOR
FPC
South Atlantic division
COE
COE
COE – Bonneville Dam
NOAA
Nez Perce
Idaho
BPA