

COLUMBIA RIVER REGIONAL FORUM

TECHNICAL MANAGEMENT TEAM

May 30, 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.

Priest Rapids Update

TMT members reviewed the graph linked to the TMT agenda, showing no exceedances through the fourth and final weekend of flow protection.

Action/Next Steps: The project will continue to operate with standard flow bands up to 400 temperature units, for rearing protection. An update on Priest Rapids will be on the agenda for the 6/13 TMT meeting.

Grand Coulee Flood Control

The project was at 1267.3' on 5/30. John Roache, USBR, reported that the maximum flood control elevation of 1273.9' was still in effect until May 31. There is also a maximum flood control elevation of 1275' by 6/3.

Action/Next Steps: Cindy Henriksen, COE, said that more technical information, including year-to-year comparisons, as requested, will be available and shared at the 6/13 TMT meeting.

Updated Flow Forecasts / Dworshak Operations

Cindy Henriksen, COE, referred TMT to several flow forecasts posted to the TMT web page, updated as of 5/29. She noted that inflows to headwater projects were generally in recession. Paul Wagner, NOAA, reported that FPAC discussed a recommendation for Dworshak: dropping outflows to 2.5 kcfs (one small unit), given the projected high temperatures and low inflows. ID and the Nez Perce Tribe said they recommended stepping outflows down as soon as possible, and CRITFC said that given the forecast for June, they concurred. Henriksen acknowledged the desires of the Salmon Managers to operate the project conservatively, and noted the COE desire for a step down in outflows through the month of June while maintaining a 2' reserve in case of a rain event, thereby avoiding any potential 'fill and spill.' Federal Agency representatives held a caucus and made a Dworshak recommendation to operate Dworshak with outflows of 4.4-4.5 kcfs (2 units) from 5/30 and holding until 6/2, when the project will shift to 2.3 kcfs (one small unit.)

Action/Next Steps: This item will be on the agenda for the TMT meeting on 6/13. Cindy Henriksen said she would work with Dave Statler, Nez Perce Tribe, to develop scenarios for review at the next meeting.

UPDATE: Henriksen sent the following email out at 5:11 p.m. on 5/30:

“At 2200 hours, outflow will be reduced from approximately 5400 cfs to 4500 cfs. A second reduction will occur on Friday evening, 01 June at 2200. At that time, outflow will be reduced from approximately 4500 cfs to 2300 cfs. The Friday night reduction is slightly sooner than what had been described during the TMT meeting today. The Friday night reduction still meets the multiple purpose uses of the dam, and based on what I heard at the TMT meeting today is consistent with the desires of the salmon managers”

Libby Operations Scenarios

Cindy Henriksen, COE, referred TMT to two scenarios linked to the TMT agenda that were based on the newly forecasted inflows of 6.3 MAF, showing how operations might be shaped after the sturgeon pulse. The first scenario showed a flat 12.6 kcfs flow beginning 6/23, when the sturgeon flow is expect to be exhausted and continuing through August refill. The second scenario was a ‘double peak’ operation which would reduce outflows to 9 kcfs on 6/23 (the bull trout minimum), then increase to 17.0 kcfs on 8/1, and continuing through to refill. MT commented that the first scenario was their preference and suggested that further information on the status of sturgeon spawning and updated June forecasts will help them determine whether dropping flows earlier than 6/23 and/or dropping to a rate between 12.6 and 9 kcfs would be feasible.

Action/Next Steps: MT will likely draft an SOR that addresses the desire for flatter flows through August and potentially into September. MT will look to gather input/feedback from IT representatives at their 6/7 meeting, and Libby Operations will be discussed by Salmon Managers and TMT members at the 6/13 meeting.

Temperatures at Libby/Kootenai River

Cindy Henriksen, COE, referred TMT to temperature graphs linked to the TMT agenda that were developed by the Sturgeon Recovery Team. The graphs showed reservoir temperatures warming as the season progresses; outflows have yet to reflect that warming. Reservoir temperatures were approaching the 10°C that is best for sturgeon spawning. TMT members commended the job the COE does in managing the complex river system.

Action/Next Steps: The COE will provide updates to TMT at the 6/13 meeting and will ask FPAC members which particular information would be most useful in making an operational recommendation.

Operations Review

Reservoirs – Cindy Henriksen and John Roache reported on reservoirs. Grand Coulee was at elevation 1267.3' and will have elevations of no greater than 1275' effective 6/3. Hungry Horse was about 9' from full, at 3551.06', with 6.2 kcfs outflows. Libby was at 2411', with outflows at full powerhouse. It was noted that the Libby unit discussed during the 5/23 conference call was indeed only offline for a few hours. Dworshak was at elevation 1591', about 9' from full. Average flows through 5/29 were 81 kcfs at Lower Granite, 175 kcfs at Priest Rapids and 268 kcfs at McNary.

Fish – Paul Wagner, NOAA, reported on juvenile and adult fish. Updated passage numbers on the Fish Passage Center website indicated that yearling migration was ending. Lower river passage seemed to have reached its peak as well. Subyearling counts were picking up at Lower Granite, with counts of 3,000 and expected to climb during the coming weeks. Steelhead at Lower Granite were decreasing into the 10,000 range and were decreasing at Little Goose and Lower Monumental as well. Wagner noted that Little Goose data was expected to be updated with RSW information, to better reflect actual counts. Sockeye passage at Lower Granite peaked between May 15-21st. Wagner added that the tailrace at Lower Monumental was at a temperature of 14°C and was expected to continue to rise. Total Chinook counts at Bonneville were at 65,354 and close to predicted; Jack counts continued to be strong.

NOTE: Russ Kiefer, ID, referred TMT to a recent shift in the pacing of fish passage at Little Goose and Lower Monumental. He noted that ID was very concerned and that he wanted TMT members to be aware of the as yet unexplained difference in passage timing compared to that of previous years. He said that he would be working with local project biologists and FPOM to try to understand the problem and would contact TMT members ASAP if there was any identifiable need for a substantial change in operations.

Power system – Nothing to report.

Water quality – Laura Hamilton, COE, referred to the TMT homepage and reported on TDG exceedances: there were 10 exceedances in the last two weeks and 37 total exceedances for the month of May. Spill cap information is updated every two weeks on the TMT web page.

Spring-Summer Non-Treaty Storage Agreement

Tony Norris, BPA, reported the following: Arrow has been up against flood control since the end of April and is expected to be at flood control through June. The consequences are that some of the 1 maf summer flow augmentation water will likely be forced out in June. It also means that the potential for moving water from spring to summer is very unlikely. Given these facts BPA had some questions for the Salmon Managers.

1. Do you want BPA to continue to pursue spring for summer non treaty storage in the chance that some storage space might be available?
2. If so, how much storage is an acceptable amount?

Salmon Managers present at the meeting said that more information, including June forecasts, HYSSR runs, and June-August flows and volumes would need to be reviewed prior to providing feedback on the questions.

Action/Next Steps: Tony Norris will discuss the questions with the Salmon Managers offline and this will be an item on the agenda for the 6/13 TMT meeting.

Next face-to-face TMT meeting: Wednesday, June 13th

Agenda items will include:

- Review Facilitator's Notes/Meeting Minutes from 6/14, 5/16, 5/23 and 5/30.
- Priest Rapids Update

- Grand Coulee Flood Control Update
- Updated Flow Forecasts
- Libby Operations Scenarios
- Dworshak Operations
- Snake River Transportation Follow-Up
- MT SOR for Libby/Hungry Horse
- Nez Perce Summer Operations
- Spring-Summer Non-Treaty Storage Agreement
- Operations Review

**Columbia River Regional Forum
Technical Management Team Meeting
May 30, 2007**

1. Welcome and Introductions

Today's TMT meeting was chaired by Cindy Henriksen and facilitated by Robin Harkless, with representatives from BOR, CRITFC, COE, BPA USFWS, NOAA, Montana, Idaho, and the Nez Perce Tribe 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 Meeting Minutes

The COE is reviewing the notes and comments for TMT meetings held on May 14, 16 and 23, Henriksen said. These notes can be finalized at the June 13 meeting. Notes for the meetings on May 2 and 9 have been finalized and are attached to the TMT webpage.

3. Priest Rapids Update

The need for this operation usually lasts until mid-June, said Paul Wagner (NOAA) on behalf of Russell Langshaw (Grant County PUD). The four special weekends of controlled flows are done. Grant County PUD will continue to monitor the number of temperature units accumulated to determine the end of the Chinook protection operation. As of the last TMT meeting on May 23, 800 temperature units had been accumulated, with 400 more to go. The updated report on the Priest Rapids operation is attached to today's TMT agenda.

4. Grand Coulee Flood Control

As of last week's TMT meeting, the maximum Grand Coulee flood control elevation was 1,273.9 feet on May 31; the current guidance is elevation 1,275 feet on Sunday, June 3, John Roache (BOR) said. Grand Coulee is at 1,267.3 feet now and filling. The COE will have more information available for the next TMT meeting on June 13, Henriksen said. Paul Wagner (NOAA) asked how things stand relative to prior years. That question was raised before, Harkless noted.

5. Updated Flow Forecasts

Henriksen presented updated inflow forecast graphs for Libby, Dworshak, Hungry Horse, and Lower Granite. The first 10 days represent a single deterministic inflow forecast, followed by 44 historical sequences of temperature and precipitation overlaid on snowpack. Inflows at most projects generally are in recession. Remaining inflows this season will come from whatever snowpack is

still available, plus unforeseen rain events. Jim Litchfield (Montana) asked whether Libby would peak in the next week or so at around 60 kcfs; Henriksen said yes, but that Libby inflow has been a “dribbler” thus far this year.

Hungry Horse inflows were 10 kcfs yesterday, and Roache thought they would go higher than that as a result of snowmelt. Lower Granite regulated flows show a general recession from now through the end of June, Henriksen said. Beginning around the first of July, flow increases can be expected as a result of Dworshak flow augmentation.

Regarding Dworshak augmentation volumes, the average outflow available from May 29 through June 30 is 5 kcfs, with a maximum outflow of 6.9 kcfs, according to the ESP graph. The regression equation forecast using the expected volume from the May final water supply forecast shows an average outflow of 3.7 kcfs from now through the end of June. Henriksen noted the difference between the two methodologies is that the ESP inflow is updated weekly, and the regression forecast was prepared May 1. Dave Statler (Nez Perce) asked for more information regarding flow augmentation assumptions for Dworshak this summer and fall; Henriksen said she would get back to him on that before the next meeting. Dworshak flow augmentation scenarios will be on the June 13 agenda.

Discussion moved to Dworshak operations, including a brief federal caucus, summarized under #7 below.

6. Libby Operations Scenarios

Henriksen presented two “bookend” scenarios for Libby operations in response to a request made at last week’s TMT meeting. The flat flow operation involves another week of full powerhouse outflows through next Tuesday, then 20 kcfs for 3 days and 15 kcfs flat flows after that, until the 1.1 maf sturgeon volume is exhausted June 23. Following that, outflows would be dropped to 12.6 kcfs and the reservoir managed to meet elevation 2,439 feet by mid August. She noted that the regression water forecast is 6.99 maf, whereas the STP forecast, on which this scenario is based, was only 6.3 maf. This forecast shows a refill failure of around 11-12 feet. Modeling of the 6.9 maf forecast resulted in a flat flow of about 15 kcfs following the end of the sturgeon volume ending June 23, with a similar failure to fill the reservoir.

The other bookend is a double peak operation which is identical throughout the remainder of the sturgeon pulse ending June 23. Then outflows drop to 9 cfs, the bull trout minimum flows, in order to fill the reservoir as full as possible. On Aug. 1, outflows increase to 17 kcfs, based on the same inflow forecast of 6.3 maf. While emphasizing that the double peak operation creates havoc in the upper river, Litchfield said the exercise helped him understand the substantial uncertainty involved in forecasting inflows. TMT members made two

suggestions: (1) check sturgeon data for the possibility of dropping flows at Libby sooner than June 23, and (2) look at the possibility of releasing flat outflows of from 9 to 12.6 cfs, thus extending available volume further into September.

Litchfield volunteered to prepare a Montana SOR regarding Libby operations for the June 13 TMT meeting, seeking consensus in the meantime regarding flat flow targets throughout the summer. NOAA, Idaho and Montana representatives agreed to that process. Roache asked if a Hungry Horse proposed operation would be included in the SOR and Litchfield said yes, that a proposed Hungry Horse operation would be included. The Montana representatives will try to prepare the SOR in time for the IT meeting on June 7.

7. Dworshak Operations

At their last meeting, FPAC members expressed a desire to reduce flows to approximately 2.5 kcfs now, refill the project in early June, and pass inflows for the rest of the spring season, Wagner said. This is going to be a low flow summer and the Snake River is already heating up.

Because the reservoir is at elevation 1,591 feet now and filling, the concern is that if it fills in early June, a “fill and spill” situation could result, Henriksen said. Russ Kiefer (Idaho) favored going to efficient operation of one small unit now, stepping down to the FPAC recommendation of 2.4-2.6 kcfs at this time, adjusting operations later as needed. He agreed with Statler that filling the reservoir now would allow for more flexibility later, and that the risk of “fill and spill” is low. Most of June will probably be dry, so CRITFC favored a conservative approach, making sure that Dworshak reaches refill elevation by the end of June, Kyle Dittmer said.

The Action Agencies caucused to discuss Dworshak operations. As a result, the Action Agencies and the Salmon Managers agreed on a Dworshak strategy for June: allow the reservoir to fill (it’s presently 9 feet from full) and reserve flows for use as needed later for temperature control of the river. The COE will change to two units and 4.6 kcfs outflows at Dworshak this evening, with a later reduction to one unit and 2.3 kcfs outflows on Saturday morning, June 2, Henriksen said. The COE will reserve 2 feet of space in the reservoir below full pool of 1,600 feet as a buffer against “fill and spill.” That is equivalent to approximately 39 kaf of water storage, Henriksen said. USFWS, NOAA, BPA, Idaho, and Montana representatives agreed to this operation. TMT will revisit the issue at its June 13 meeting.

8. Operations Review

A. Reservoirs. Grand Coulee is at elevation 1,267.3 feet and slowly filling, Roache said. Its maximum elevation is 1,275 feet as of Sunday, June 3.

Hungry Horse is at elevation 3,551.06 feet, releasing 6.2 kcfs, 9 feet from full, Roache said.

Libby is at elevation 2,411 feet, 48 feet from full, Henriksen said. Outflow continues at full powerhouse for the sturgeon pulse. For about 2:30 to 3:00 hours on the afternoon of May 23, there was a brief ramp down to repair one of the units, which accounts for the small reduction in hourly outflows that day, Henriksen said.

Dworshak is at elevation 1,591 feet, about 9 feet from full. There will be reductions in outflow beginning this evening as discussed under “Dworshak Operations” above. Priest Rapids average flows were 175 kcfs for May; McNary average flows were 268 kcfs for May; and Lower Granite average flows for the month were 81 cfs.

B. Fish. Combined yearling Chinook counts have fallen to around 100,000 at Lower Granite and Little Goose, Wagner said. Even fewer fish have passed Lower Monumental, which indicates that the end of yearling Chinook migration is in sight. Counts are also trending down at John Day and Bonneville dams.

Index counts for subyearling Chinook – the coming attraction in terms of river management – have increased from a couple hundred per day to around 3,000 a day, Wagner said. Hatchery releases will begin in the next week, if they haven’t begun already. Counts will include wild and hatchery fish.

Steelhead counts at Lower Granite are higher than for yearling Chinook, but in general also appear to be decreasing, Wagner said. Lower Monumental counts reflect the effects of transportation at upper river projects. Wagner noted that the RSW at Lower Granite passes fish more efficiently than a typical spillway, and the passage index will be revised soon to reflect that.

Sockeye yearling migration at Lower Granite peaked at around 50,000 on May 15-20 and is now decreasing, Wagner said.

Adult Chinook passage at Bonneville is at 65,352, which is within the range of the pre-season forecast of 80,000 fish at the Columbia River mouth. Jack counts are still going strong, headed for a record year. In general, conditions in the estuary look good this year, Wagner said, which could lead the way to a string of good years for fish, though conditions right now are not good in the Snake River.

Russ Kiefer pointed out that adult passage data from April 1 through May 31 in the Snake indicate that something between Lower Monumental and Little Goose is causing problems for the run, with counts of 21,852 and 14,536 respectively. Something appears to have stalled around 5,000 adults moving up the river, which is of concern to Idaho. Kiefer noted that the counts tracked much

more closely last year, despite higher levels of spill last year. He asked TMT to start thinking about a cause and a solution for whatever has stalled such a large portion of this year's returning adults.

Regarding sturgeon spawning, a tagged ripe female and a tagged ripe male have been detected upstream of Bonner's Ferry, Marotz reported. As soon as the water temperature passes 8 degrees centigrade, conditions are considered good for spawning. Eggs have been taken to stock the Kootenai Tribal hatchery. The TMT will check back in on the sturgeon operation June 13.

C. Power. There is nothing new to report regarding the power system, Tony Norris (BPA) said.

Regarding the Spring/Summer non treaty storage agreement, Arrow has been up against flood control since the end of April and is expected to be at flood control through June, he said. The consequences are that some of the 1 maf summer flow augmentation water will likely be forced out in June. It also means that the potential for moving water from spring to summer is very unlikely. Given these facts, Norris presented some questions for the Salmon Managers to consider:

1. Do you want BPA to continue to pursue spring for summer non treaty storage in the chance that some storage space might be available?
2. If so, how much storage is an acceptable amount?

D. Water Quality. Laura Hamilton (COE) showed TMT how to access 2007 spill information from the TMT webpage (it's under water quality data). There have been 10 TDG exceedances in the past two weeks and 37 for this month. Generally, the number of exceedances is going down, due to lower flows and the fact that most projects are operating either to a percentage of spill or a fixed spill quantity.

9. Next TMT Meeting Agenda

The next TMT meeting on June 13 will include a Priest Rapids update, Dwoshak current operations and scenarios for summer, Libby operations, an update on the sturgeon pulse, the Montana SOR on Libby and Hungry Horse reservoir management, a Grand Coulee flood control update, review of various meeting minutes and facilitator's notes, and the usual operations review. This meeting summary was prepared by consultant and writer Pat Vivian.

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Cindy Henriksen	COE
Paul Wagner	NOAA

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