

COLUMBIA RIVER REGIONAL FORUM

TECHNICAL MANAGEMENT TEAM

July 26, 2006 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.

Libby/Hungry Horse Operations

Cathy Hlebechuk, COE, reported that as of the evening of July 25th, per recommendation, operations flows at Libby were reduced to 14-14.5 kcfs. The STP volume for April through August was 6.64 MAF. At 14-15 kcfs and with an updated volume forecast, Libby end of August elevation was projected to be at 2446.5'. It was recalled that a gradual ramp down (to 9-10k) was the general recommended operation for September – with a desire to make accommodations for the influence on reservoir elevations and inflows. John Roache, BOR, reported that Hungry Horse was ramping down 3 kcfs and was expected to hold until the end of August – with the expected end of August elevation to be around 13'. Robin MacKay, BPA, and others expressed an interest for TMT to plan operations for September soon, as a need for continual decline through October is expected. Others expressed a desire to include Montana in those discussions; Montana was not present for today's meeting.

Next Steps: Continued discussion on developing operations for September will be discussed at the August 9 TMT meeting.

Dworshak Operations

Cathy Hlebechuk, COE, reported that Dworshak discharges on July 25th were reduced to 12 kcfs, with all three units in undershot mode, per the TMT conference call. Laura Hamilton, COE, reported that TDG levels were not a problem, and that temperature releases had been maintained at 43 degrees since June 28th. Lower Granite temperatures were hovering around 67 degrees. It was suggested that air temperatures should be added to the graphs, and that this highlights the impressive hold of water temperatures even with the record high heat. Anatone was at 76 degrees and releasing 22 kcfs. Kyle Dittmer, CRITFC, reported that although temperatures were currently 10-12 degrees above normal, there was a strong likelihood that temperatures would be normalizing by July 31st or August 1st in the region. STP volume graphs showed that holding Dworshak at 10k result in a negative for augmentation flow at the end of August. Two proposals were expressed: operate to 10 kcfs as soon as possible OR maintain 12 kcfs over the next four days and check back in via a TMT conference call on Monday, July 31st.

A salmon manager Caucus was held, during which a suggestion was made to maintain 12 kcfs until midnight on Friday, then go to 11 kcfs over the weekend and have a FPAC/TMT check in on Monday, July 31, at 11 a.m.

ACTION: The COE planned to stay at 12 kcfs through Friday, then go to full powerhouse at midnight. FPAC will meet at 10 a.m. on Monday, July 31st and determine whether to propose a change in operations; if so, a TMT call would be scheduled for 11 am. If there is no call, operations will stay at full powerhouse.

UPDATE: CONFERENCE CALL JULY 31: TMT held a conference call on Monday, July 31, to discuss current conditions, review COE modeling and discuss Dworshak operations. Per an SOR submitted to the COE on Friday, July 28 from the salmon managers, the COE operated Dworshak over the weekend at 12 kcfs. Mike Schneider, COE, shared operation scenarios at varying flow levels out of Dworshak, projecting temperatures and volumes for the month of August. The COE noted that cooler temperatures were expected in the Lewiston River this week, and that an uncertainty remained about the amount of flow that would be coming out of the Hells Canyon projects.

During an FPAC call earlier on July 31, the salmon managers developed a short-term recommendation to operate Dworshak at full powerhouse as soon as reasonably possible, and target 43 degree water out of the project if possible. The COE responded that the project could go to full powerhouse quickly, and that in all undershot mode, the project would release water of about 45 degrees.

ACTION: Per request, Mike Schneider planned to do additional modeling to show what the system would look like for the rest of August if the project reduced to 7.5 kcfs on Tuesday, August, 1, and what it would like with a reduction to 7.5 kcfs on Friday, August 4. TMT members could check the web page and, if the model results prompted the salmon managers to recommend a different operation than full powerhouse, a TMT conference call will be held on Wednesday, August 2 at 9:00am. The COE planned to operate the project at full powerhouse until a different operation was recommended.

Nez Perce SOR

Greg Haller, Nez Perce, proposed raising SOR 2006-NP-1 to IT for policy review. Haller noted that they were looking to have support from IT on the general framework within the SOR as well as policy around BPA cost savings share for conservation enforcement. (A more detailed memo with specific questions was sent to IT from Nez Perce.)

ACTION/Next Steps: IT reps were notified that this issue will be discussed at IT on August 3.

Emergency Protocols / John Day Fill

Robin MacKay, BPA, addressed the potential to add detail to the actions listed in Groups 1 and 2 to ensure clarity and to allow more flexibility in the event an immediate action needed to be taken. The COE noted that actions that increase flows or operate outside of

MOP are ones that potentially require teletypes, and requested that a better coordination and communication system be put in place to notify TMT and the action agencies of any changes in operations.

Next Steps: Discussion on making changes to actions in Groups 1 and 2 will continue at the next TMT Process Meeting.

Operations Review

Reservoirs: Hungry Horse elevation was 3553.4', Libby elevation was at 2554.4', Dworshak was at 1575.6', Grand Coulee was at 1285.9'. McNary daily flow averages were between 162-186 kcfs. An end of July target for Grand Coulee had not yet been specified by the BOR.

Fish: The summer Chinook run was winding down, with an end of the month prediction of 78,600, and the Sockeye prediction was 37,000. August 1 will mark the beginning of the Fall run from a fisheries perspective, with a forecast of 474,000 compared to last year's 560,000. Commercial fishing seasons were to be set on July 27th; Cindy LeFleur, WA, offered that a one page summary could be found posted on the ODFW web page. Juvenile numbers were down to less than 1,000 at all Lower Snake projects and on the Lower River were around the 10,000-20,000 range.

Power: John Day transformer T-1 is back in service, with one unit out for its "six year mark" overhaul. The scheduled outages for Lower Snake project double testing was posted to the TMT web page.

Water quality: Temperature continues to be the main concern in the system; all current temperature data was available on the website under "Operation Spill Information."

Next TMT Face to Face Meeting, August 9, 9:00-noon

Agenda Items include:

- Dworshak Operations
- Libby/Hungry Horse Operations
- Summer Fisheries Review
- Emergency Protocols
- Operations Review

Technical Management Team Conference Call

July 26, 2006

1. Greetings and Introductions.

Today's Technical Management Team meeting was chaired by Cathy Hlebechuk and facilitated by Robin Harkless. The following is a summary (not a

verbatim transcript) of the topics discussed and decisions made at this meeting. Anyone with questions or comments about these notes should contact Hlebechuk at 503-808-3542.

2. Libby and Hungry Horse Operations.

The modified Libby operation was approved by the policy people last Friday, Hlebechuk said, and the project reduced outflow to about 14.5 Kcfs last night. There are a couple of graphs on the web, the first showing an April-August STP volume of 6.64 MAF. According to this forecast, Libby would end up at elevation 2441.7 on August 31 if we hold this rate of discharge through the end of August, she said. Another forecast is slightly higher; it shows a slightly higher volume of 6.852 MAF and an August 31 Libby elevation of 2446.5.

In terms of the September operation, our anticipation is that we will ramp down gradually through the end of September 30, Hlebechuk said; we should probably wait until closer to the end of August before trying to specify a particular rampdown rate. For now, however, Libby will be doing a three-unit operation, with actual outflow increasing toward 15 Kcfs as head at the project drops. I think what Montana proposed was an average Libby outflow of 9-10 Kcfs through September, but we understand that some adjustments may be necessary once we see where the project elevation is on August 31, said Paul Wagner. It was agreed to revisit the September Libby operation at the August 8 TMT meeting.

Moving on to Hungry Horse operations, John Roche said Reclamation has begun ramping down Hungry Horse outflow, from 5.2 Kcfs to 3.8 Kcfs last night. We will ramp down to 3 Kcfs tonight, and will hold that through the end of August, which should leave the project 13-14 feet from full by August 31. In September, we will ramp down further to about 2 Kcfs outflow from Hungry Horse, he said.

3. Dworshak Operations.

Dworshak was ramped down to 12 Kcfs on Monday, with all three units in undershot mode, plus just over 2 Kcfs spill through the regulating outlets, Hlebechuk said. Laura Hamilton briefed the group on the current water quality situation, noting that TDG isn't an issue at this point. With respect to water temperatures, we have been releasing a constant 43 degrees from Dworshak since June 28, she said. At the Lower Granite tailrace, we are just hovering at about 67 degrees, just below the 68-degree threshold. During July, the average temperature has been 67.7 degrees, although it has cooled somewhat in recent days. Scott Bettin noted that the thermal loading from air temperatures and from Hells Canyon outflow has been incredible this year; it is a major accomplishment that we have been able to maintain water temperatures below 68 degrees in the Lower Granite tailrace, he said. Dave Statler noted that water temperatures at the Anatone gauge exceeded 76 degrees last week. Kyle Dittmer said clouds and cooler temperatures are expected in the Lewiston area over the next few days, which should help moderate the situation somewhat.

As we explained on Monday, according to the current forecast, we're going to have to reduce Dworshak outflow to below 10 Kcfs as soon as we can or we will miss the 1535-foot August 31 elevation target at that project, Hlebechuk said. The Corps would prefer to reduce Dworshak discharge to 10 Kcfs or below as soon as possible. The group devoted a few minutes of discussion to the question of when Dworshak outflow should be reduced, and to what volume. Russ Kiefer recommended against reducing Dworshak outflow now, because although air temperatures in the Lewiston region are now moderating, they are still well above average. Rick Kruger said Oregon agrees with that assessment. Could you release 10 Kcfs from Dworshak, but lower the release temperature through greater use of the regulating outlets? David Wills asked. Yes, that would be physically possible, but the flow out of the ROs is spill, which produces more TDG, and we're not sure what the exact release temperature would be, Hamilton replied.

What's happening with the juvenile outmigration right now? Statler asked. We're on the back end of the migration, Wagner replied; numbers are declining at the projects, and the Clearwater fish are mostly rearing in the reservoirs at this point. It was noted that the flow augmentation deficit, at this point, is about 46 kaf below the 1535-foot August 31 target elevation; every day above 10 Kcfs discharge from Dworshak from here on out will worsen that deficit.

Following a caucus break, Wills said there was a considerable diversity of opinion among the salmon managers about what to do next, in terms of the Dworshak operation. After much discussion, he said, we have decided to be as conservative as possible while still saving at least a little water. We recommend that you maintain 12 Kcfs through midnight Friday, then drop down to 11 Kcfs over the weekend. On Monday morning, the salmon managers will caucus again, look at the data, then check in via conference call on Monday afternoon, to see whether it would be possible to reduce Dworshak outflow further. The assumption is that, as flows recede in the Snake through August, it should be possible to proportionally reduce Dworshak outflow, Wills said. Haller said the Nez Perce cannot support that recommendation, because it will unacceptably erode the remaining flow augmentation volume available from Dworshak between now and August 31.

Ultimately, Hlebechuk said the Corps would be willing to maintain the current 12 Kcfs discharge from Dworshak through midnight Friday, at which point they will reduce Dworshak discharge to full powerhouse discharge, about 9.6 Kcfs. FPAC can then review the data on Monday morning, followed by a likely TMT call to discuss Dworshak operations on Monday at 11 am. No TMT objections were raised to this course of action.

Haller noted that the Nez Perce SOR on Dworshak operations, submitted in late June, did not receive full TMT concurrence. I would like to elevate that

issue to the IT, he said, so that the SOR can receive policy review. We believe we are implementing the Nez Perce SOR right now, he said; perhaps we can schedule an IT meeting for August 3. We would like to be sure that the framework of the recommendation we submitted enjoys IT policy support, Haller explained.

4. Filling Into John Day for Emergency.

This is something we may need to add to the list of emergency actions and protocols, said MacKay. These actions are grouped into three categories. The system worked really well through this week's events, but we should probably review these emergency actions, given expected warm temperatures through the end of summer. BPA would like to add filling John Day pool to the list, probably under Group 1 or Group 2, MacKay said.

The salmon managers discussed this the other day; our consensus was that it would be acceptable to go to a two-foot operating range at John Day as a Group 2 action, Wills said. Hlebechuk noted that the Corps would need advance notice from BPA so they could coordinate this action with TMT. Some of the Group 2 actions require a teletype, she said, so again, we would need some advance notice.

MacKay noted that Group 1 actions can be implemented at BPA's discretion, without consultation with TMT. My concern is the lag time associated with some of the Group 2 actions, she said – I would like to get some of those items set up so that they are available more immediately. I would like to review some of the Group 2 and Group 3 actions, so that we can build the comfort level among the salmon managers and get them implemented more quickly if they prove necessary, MacKay said. One good example was switching the 60%/40% spill days at John Day, which we coordinated with TMT on Monday – that was very helpful.

Rick Kruger said Oregon is concerned about the increase in fish travel time if John Day pool is filled; Wagner replied that the increase in travel time would likely be small and temporary. Wills noted that his understanding is that the Group 2 actions can be implemented at the action agencies' discretion, without consultation with TMT, in the hopes that the Group 3 actions will not become necessary. Hlebechuk said this is not the Corps' interpretation of the emergency protocols; they believe at least some coordination with TMT is needed for some Group 2 actions.

Hlebechuk said increased flows at some projects, operating some projects outside 1% and violating flood control are some of the Group 2 actions that would require a teletype and some advance coordination. After a few minutes of discussion, Wagner said he agrees in principal with the need for greater action agency operational flexibility in implementing Group 2 emergency actions. All

we're after is some TMT agreement on these actions ahead of time, if they prove necessary, so that we can implement them immediately, if they prove necessary, MacKay said. That way, the Corps can simply issue the necessary teletypes, without coordinating each action individually with TMT, she added.

Ultimately, various TMT members, including Wills, Wagner and Kiefer, said they were comfortable with the implementation of all Group 1 and Group 2 actions without prior coordination with, and approval from, TMT, if time is of the essence. If that can keep us from going to the Group 3 actions, that would be preferable, Kiefer said. It was emphasized, however, that the action agencies need to notify the TMT membership when operational changes are implemented, and coordinate those changes with TMT if time allows.

However, it was agreed that the TMT process group will have further discussions on the issue of what level of notification and coordination is appropriate for the Group 1 and 2 actions.

MacKay thanked the TMT for their willingness to work with the action agencies to avert a Stage 3 emergency earlier this week, in the face of record high loads up and down the West Coast

5. Operations Review.

Roche said Hungry Horse is at 3553.4 feet and drafting slowly; the project discharge is being stepped down to 3 Kcfs. The expected project elevation is about 3546 by the end of August. Libby was at 2454.4 feet at midnight last night, 4.6 feet from full. 1576 feet at Dworshak last night. At McNary, the average flow has been 162-186 Kcfs over the past week. The current Grand Coulee elevation is 1285.9 feet; there is no elevation target specified at Grand Coulee for July 31. Would you go below 1280 on August 31 for any reason? Hlebechuk asked. We don't want to, but if, for example, a power emergency occurred, we would consider it, Roche replied.

Moving on to fish, LeFleur said the adult summer chinook run is winding down. the run size was just downgraded to 78,600, less than the earlier forecast but up from a pre-season forecast of 49,000. On August 1, we officially move into fall chinook management season, she said. We will be setting commercial fishing seasons tomorrow at a Compact meeting, she said. The pre-season forecast at the river mouth is 474,000, down from 560,000 in 2005. The upriver bright run is forecast to be about 250,000; the Spring Creek return is forecast at about 52,000.

With respect to juveniles, Wagner said the passage indices at all of the Lower Snake projects have fallen below 1,000 – we're a couple of weeks past the run peak. At the Lower Columbia projects, the indices have fallen to the 10,000-20,000 range.

The action agencies said there are no significant power system problems to report at this time.

6. Next TMT Meeting Date.

The next Technical Management Team meeting was set for Wednesday, August 9. Meeting summary prepared by Jeff Kuechle, BPA contractor.

**TMT Meeting Participants
July 26, 2006**

| Name | Affiliation |
|-----------------|--------------------|
| Robin Harkless | Facilitation Team |
| Robin MacKay | BPA |
| Cathy Hlebechuk | COE |
| Greg Haller | NPT |
| Kevin Nordt | Mid-Cs |
| Shane Scott | NWRP |
| Russ Kiefer | IDFG |
| Cindy LeFleur | WDFW |
| John Roche | Reclamation |
| Paul Wagner | NOAAF |
| Doug Faulkner | COE |
| Rick Kruger | ODFW |
| David Wills | USFWS |
| Kyle Dittmer | CRITFC |
| Dan Spear | BPA |
| Dave Statler | NPT |
| Russ George | WMCI |
| Scott Bettin | BPA |
| Laura Hamilton | COE |
| Barry Espensen | CBB |
| John Coffey | SnoPUD |

| | |
|------------------|----------------------|
| Margaret Filardo | FPC |
| Dave Benner | FPC |
| Ruth Burris | PGE |
| Rudd Turner | COE |
| Glenn Traeger | Avista |
| Bruce MacKay | Consultant |
| Richelle Beck | D. Rohr & Associates |
| Bern Klatte | COE |