

COLUMBIA RIVER REGIONAL FORUM

TECHNICAL MANAGEMENT TEAM

April 30, 2008 Conference Call

FACILITATOR'S SUMMARY NOTES ON FUTURE ACTIONS

Facilitator: Robin Gumpert

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.

Chief Joseph Spill Test Update

Carolyn Fitzgerald, COE Seattle District, reported on the 4/27 spill test at Chief Joseph and referred TMT to results posted as a link to the TMT agenda. The test lasted 20 consecutive hours, with 13 kcfs spill, generation flows in the 51-117 kcfs range and hourly TDG readings in the range of 107-112% for the first ten hours of the test. During the second ten hours, spill was up to 32 kcfs, with generation flows in the 125 - 151 kcfs range and hourly TDG readings in the range of 117 – 119.8%. The Daily High Consecutive 12-Hour Average TDG (based on the new State of Washington daily TDG criteria) was 117.2%. Fitzgerald noted that gas levels were lower this year and that more powerhouse flow led to effective dilution and lower TDG levels. Fish monitoring during the test showed no signs of gas bubble trauma. NOAA commented that they were pleased to hear of the test's success.

Action/Next Steps: The COE said they plan to review the test data further and will share further insights as appropriate with TMT.

Spring Creek Hatchery Release

Dave Wills, USFWS, reported that plans were on track for the scheduled 5/2 Spring Creek Hatchery release. The COE planned to operate toward the low end of 1% as a hard constraint for the first four days following the test. USFWS stated a preference to hold this for the first four days, at a minimum, and asked the COE as to the flexibility around that if flows peak above powerhouse capacity release. After four days, the Corps planned to operate at the low end of 1% as a soft constraint for an additional four days. However, the Corps indicated that if flows increased up above approximately 280 kcfs, then the project would begin to move to higher levels within the 1% of peak efficiency. USFWS stated a preference to hold this for the first four days and asked the COE as to the flexibility around that, considering the threshold for negatively affecting the adult fish might be near the 100 kcfs spill range. Tom Lorz, CRITFC, noted that the spill pattern has been modified for this year. Paul Wagner, NOAA, suggested that TMT may need to revisit this item after the release, adding that 1-2 hours of spill above 100 kcfs would not likely negatively impact adult passage.

Action/ Next Steps: BPA will contact USFWS and NOAA if they see any issue arising over the weekend. Also, this will be on the agenda for the next TMT meeting, scheduled for 5/7.

Dworshak Operations

Steve Hall, COE, reported on the latest operational scenarios posted as links to the TMT agenda. Scenarios were based on the 4/29 ESP runs, and Hall noted they showed anticipated effects on Lower Granite as well. He also said that regarding snow pack, it was still too early to tell whether there is an increased or decreased risk of an inability to refill. Paul Wagner said that the consensus at the FPAC meeting on 4/29 was to stay with the current operation and maintain flows to provide best passage for fish. TMT members expressed hope that the freshet would provide an increase in flows and acknowledged the difficult balance in mitigating resources with a high level of uncertainty for what flows may be in the coming weeks. While concerns were raised by Montana and Nez Perce, no objections were raised to maintaining the current Dworshak operations for another week.

Action/Next Steps:

- The COE will track flows closely and provide updated scenarios by a.m. on 5/6.
- Paul Wagner, on behalf of the Salmon Managers, offered to call ID Power and make a recommendation to refill Brownlee later rather than sooner this year, as drafting at Lower Granite is impacted by Brownlee refill.
- Dworshak Operations will be on the agenda for the TMT meeting on 5/7.

Little Goose Operations

Jim Adams, COE, reported on the 4/29 testing of three Little Goose spill patterns: bulk, modified bulk and a uniform pattern. Paul Wagner, on behalf of the Salmon Managers, said that as the uniform pattern produces the least amount of TDG, FPAC prefers that option for nighttime operations. Wagner said there is some concern for the potential effects on adult passage, but recognized that they would likely be minimal. Wagner clarified that OR, WA, ID, CRITFC, Nez Perce, and USFWS supported the uniform pattern per the FPAC discussion. Dan Feil, COE, said that he spoke with the Walla Walla District staff, who agreed on support for the uniform pattern, as it may provide possible benefit to juveniles as well.

Action/Next Steps: The COE will send a teletype to Little Goose operators to use the “uniform spill” pattern at night for the remainder of the 14-day nighttime gas cap spill operation (1800 – 0600 hrs) unless otherwise notified.

Grand Coulee Operations – SOR 2008-2

Paul Wagner, on behalf of several of the Salmon Managers, presented SOR 2008-2, posted as a link to the TMT agenda. The request included a recommendation to meet flow objectives at McNary through augmentation from Albeni Falls, Grand Coulee and Libby dams. He noted that the 180 kcfs weekly flow objective was chosen as representative of average weekly flows at McNary and that directional migration cues and timing of passage are influenced by management of projects and this SOR is an effort to create the best possible passage conditions. Jim Litchfield, MT, asked if COMPASS modeling could shed any light on what Coulee flows would be with vs. without implementing the SOR. Wagner said that as conditions this year have little representation in past years, modeling results would not likely help inform this specific

request. John Roache, BOR, clarified that 1228.8' remains the end of April flood control elevation. Margaret Filardo, Fish Passage Center reported that PIT tag study results indicate that the steady flows requested in the SOR would impact both Snake River and Mid-Columbia stocks.

Cathy Hlebechuk, COE, referred TMT to graphs linked to the TMT agenda showing potential impacts to Libby from the requested operation. The COE's Seattle District noted the unique conditions for this year and that the COE reviews as many information sources as possible as it generates ESP analyses. A round of feedback on the proposed SOR generated the following bulleted summary of the discussion:

- COE: Recommend operations in accordance with the proposed SOR, including passing inflows at Albeni Falls and increasing Libby outflows up to 9 kcfs, until the freshet arrives, then shifting to VARQ flows. Recommended that TMT re-evaluate operations on a weekly basis. Recognize that inflows and the potential for Coulee draft are still uncertain.
- BOR: support the proposed SOR, and recommend minimizing draft of Grand Coulee to the extent possible. Suggest meeting the objectives in the SOR and with augmentation from Libby. Recognize that inflows and the potential for Coulee draft are still uncertain.
- BPA: anticipate that the need to implement the proposed actions in the SOR, in order to maintain average flows of 180 kcfs, will be short-term. Recognize that inflows and the potential for Coulee draft are still uncertain.
- MT: expressed concerns about the flood control elevations at Libby/Hungry Horse and impacts to fish above and below the projects, including temperature effects. Acknowledge that the timing of the sturgeon pulse will be an issue in the future. Willing to support the proposed SOR, utilizing Libby and Hungry Horse runoff now, and hoped that this support could also foster consensus on a commitment to implement the Montana requirements in the new BiOp for this summer operations at Libby and Hungry Horse. Planned to submit an alternative SOR to that effect.
- NOAA: support implementation of the SOR to the extent possible. Support the Montana request from a technical basis, and would require consensus of the region to move forward.
- USFWS: technically support SOR 2008-2 as written, to the extent possible.
- Colville Tribe: has concerns with the proposed SOR, specifically the use of Grand Coulee to meet flows at McNary, given later migration timing, cultural resource concerns and potential navigation impacts to the ferry system. Requested that the decision be made when more parties were available.

- NOTE: Greg Hoffman, COE, made a request to have an opportunity for technical discussion amongst the Sturgeon Recovery Team of any anticipated impacts of the proposed SOR on sturgeon.

The COE suggested further discussion and feedback from members of the Sturgeon Recovery Team, and the specific alternative recommendation from Montana be brought back for further discussion at TMT. A short-term operating plan was developed in the interim and a conference call was convened for Friday, May 2, at 1:00. The planned operation between Wednesday April 30 and Friday May 2 was as follows, with the purpose of meeting the SOR 2008-2 request:

- Albeni Falls inflows will be passed rather than refilling the project. Outflows may be reduced on a short term basis for local flood control.
- Grand Coulee will be drafted to the extent necessary to meet the remaining 180 kcfs weekly average flows at McNary requested in the SOR
- Libby will continue maintaining 4 kcfs minimum flows
- The action agencies will closely monitor the operation and coordinate with affected stakeholders any resulting impacts such as disruptions to ferry transportation.

At that time, TMT members recognized the possibility that the discussion may result in the need to elevate the issue to IT, and notified their respective IT representatives that a call may be convened as soon as Monday, May 5 to discuss the SORs.

Next TMT Meeting: a conference call scheduled for 5/2 at 1 p.m.

Agenda Items include:

- SOR 2008-2
- MT SOR

5/7 TMT meeting

Agenda Items include:

- Priest Rapids Operations
- Spring Creek Operations
- TMT Guidelines
- Water Management Plan spring/summer update
- Operations Review

**Columbia River Regional Forum
Technical Management Team Conference Call
April 30, 2008**

1. Introduction

Today's TMT call was chaired by Jim Adams (COE) and facilitated by Robin Gumpert (D.S. Consulting), with representatives of BOR, USFWS, BPA, NOAA, COE, FPC, CRITFC, Montana, Idaho, Washington and others attending in person or by phone. 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

Discussion of meeting minutes (as well as the standard operations review) was deferred until next week.

3. Chief Joseph Spill Test Update

The four-day spill test for adult passage began April 27, Carolyn Fitzgerald (COE Seattle) reported. There was a possibility of TDG levels above 120% but actual TDG readings came in below that. The test, lasting 20 consecutive hours, consisted of small spill increments totaling 13 kcfs for the first 10 hours, then 32 kcfs through 2 of 19 spill bays for the second 10 hours. Powerhouse flows were 117 kcfs during the first 10 hours and 125-151 kcfs during the second 10 hours. The TDG readings at a downstream monitoring station were 107-112% for the first 10 hours, and 118-19% for the second 10 hours. The daily average TDG reading was 117% and the highest reading was 119.8% TDG.

Though flows this year were similar to last year's, the gas levels were lower this year. Forebay TDG levels were 104-105% this year, compared to 108-19% last year. The COE will need to investigate the uplift phenomenon further; at this point, there is nothing conclusive to report. Fish monitoring done during the testing has found no symptoms of GBT.

4. Spring Creek Hatchery Release

The release is scheduled for the morning of May 2. The COE will begin operating the Bonneville turbines at the lower end of 1% on the morning of May 3 when the fish arrive. Last week, the COE said that river flows above 280 kcfs might mean going off the low end of 1% in lieu of involuntary spill, which would impact adult passage.

Dave Wills (USFWS) asked whether the COE and BPA would commit to maintaining the low end of 1% for the first 4 days of the May release, followed by an evaluation of whether such flows could continue without impacting adults. Intermittent hourly peak flows of over 100 kcfs won't have much of an impact on adults. The spill pattern has changed since fish were being delayed at 105 kcfs, Tom Lorz (CRITFC) added.

It doesn't look like flows are going to be high anytime soon, Wagner said. NOAA recommended checking in later on this issue. USFWS recommended maintaining the low end of 1% and spilling over 100 kcfs for short periods, if necessary. BPA has been trying to stay within the 1% operation and doesn't have any intention of spilling, Robyn MacKay said. BPA will contact USFWS and NOAA if any issues arise over the weekend. And TMT will revisit river conditions for the hatchery release at its May 7 meeting.

5. Dworshak Operations

Steve Hall (COE) presented operational scenarios for April 29 based on ESP forecasts, similar to last week's scenarios.

Scenario 1. Full powerhouse operations through April 30. The maximum flow under that scenario is 8.5 kcfs, the average around 5 kcfs, and the minimum around 2 kcfs.

Scenario 2. Full powerhouse operations through May 7, which would result in maximum flows of around 7 kcfs, and average flows around 4 kcfs. The minimum flow does not refill Dworshak reservoir by June 30 under this scenario, reaching an elevation of 1,598 feet.

Scenario 3. Full powerhouse operations through May 14, which would result in a maximum flow of 6 kcfs, and an average flow of around 2 kcfs. The minimum flow would take Dworshak reservoir to elevation 1,590 feet on June 30.

Lower Granite STP Flows: Shows the effect of each of the above scenarios on Lower Granite flows. Curtailing full powerhouse now would create a drop in flows at Lower Granite this coming weekend. Continuing full powerhouse flows now would mitigate that effect somewhat, but would also raise concerns about refill.

Snowpack at Dworshak is at abnormally low elevations this year – a condition that is not well represented in the historical flows on which these scenarios are based. In addition, Brownlee operations are a wild card. NOAA has recommended that Idaho Power not refill but has no jurisdiction over what they do. Minimum outflow from Dworshak is 1.3 kcfs through May. These plots are based on STP runs that come out Tuesday afternoons, so weekly updates will

generally be available online by close of business Tuesday. COE intends to continue providing these analytical tools for TMT's use.

Yesterday FPAC discussed the current situation and agreed to recommend that current operations be maintained for at least another week, Wagner reported. The Salmon Managers are aware that projects are now 20 feet below their flood control elevations. Nevertheless, flows are needed to support migration of the large numbers of fish in the Snake at Lower Granite Dam.

Jim Litchfield (Montana) asked about the effects on juvenile steelhead and Chinook of migrating at only 4 kcfs flows while the reservoir is refilling under scenario 2, the one closest to the FPAC recommendation. Dave Statler (NPT) requested flows of 5 kcfs or higher (scenario 1) during the refill period.

The scenarios linked to today's agenda are based on more recent River Forecast Center information than FPAC had yesterday, Hall said. Early bird forecasts are trending lower. The new scenarios show lesser volumes by about 1 kcfs per scenario, Wagner said. The situation amounts to less than optimal operations for fish passage – flows in the mainstem Columbia have been 55 kcfs when they should be around 85 kcfs.

TMT members gave their views of the FPAC recommendation:

The Nez Perce Tribe did not object to continuing the current Dworshak operation for another week. However, all possible steps should be taken to avoid negative impacts on fish as a result of this operation.

USFWS did not object to continuing the current operation on the basis that there is a 50% chance of good results.

BPA and BOR also did not object.

Wagner reported that Idaho and Washington, while not present on today's call, participated in yesterday's consensus at FPAC. Oregon did not participate in either yesterday's FPAC call or the TMT call today.

6. Little Goose Operations

The current operation at Little Goose is rotation of three different spill patterns in random block design for a spill test of adult passage – the uniform, bulk, and modified bulk spill patterns, Jim Adams reported. Today is 4 days into the special operation of spilling to the cap during nighttime hours for 14 days.

Wagner suggested a modification that came up during yesterday's FPAC discussion. Of the three spill patterns, bulk spill produces the highest TDG, modified bulk produces less, and uniform (or flat) spill produces the least.

Because the intent of nighttime gas-cap spill is to pass as many juveniles as possible for 14 days, FPAC suggested using the uniform spill pattern at night for the next 14 days. There was concern regarding effects on the adult study being conducted, but FPAC decided the effects of using the uniform pattern during the nighttime hours on adults should be minimal. At the FPAC meeting, Washington, Oregon, CRITFC, Nez Perce Tribe, NOAA Fisheries, and the USFWS all supported this change in operation.

The COE agreed this request will not impact the adult study, and will implement the recommendation. There were no objections to the change. Spill in the flat pattern will begin at 6 p.m. tonight at Goose and will continue nightly for the entire 12 hours of nighttime gas cap spill until the 14-day operation ends.

7. Grand Coulee/Libby Operations – SOR-2008-2

Paul Wagner presented SOR-2008-2 on behalf of the Salmon Managers. The SOR calls for a minimum of 180 kcfs weekly flows at McNary Dam, to be provided by using Albeni Falls, Grand Coulee and Libby reservoir volumes. Under the SOR, Coulee would continue drafting, and Libby volume would be used for flow augmentation; Albeni Falls would simply stop refilling and pass inflows. Flows of 180 kcfs were chosen for McNary because that represents average flows this year, Wagner explained. There is plenty of snow in the basin, but cold temperatures have kept it from melting in time for peak migration. The SOR would provide better biological conditions until the spring freshet occurs, improving survival in the lower river. Minimum flows can induce fish to swim upstream, which delays their migration and exposes them to predation.

Litchfield expressed interest in seeing COMPASS modeling of biological effects in the lower river that would occur as a result of implementing this SOR. Despite the cold, fish migration in the lower river has not been delayed as expected, Wagner said. The Fish Passage Center's PIT tag data show that mid-Columbia as well as Snake River fish have been passing McNary Dam, Margaret Filardo reported.

The Colville Tribe representative stated that fish migration in the Okanogan is way behind schedule, 20% of what it normally would be this time of year. Lower flows at Grand Coulee represent lost generation income for the tribe.

The COE is willing to pass inflows at Albeni Falls until the freshet starts, and to increase inflows into Grand Coulee rather than refilling, Hlebechuk said. The current elevation of Libby reservoir is 7 feet below flood control. Libby is releasing outflows of approximately 4 kcfs per day, which would increase by an additional 5 kcfs per day if the SOR is implemented. The COE is willing to increase flows at Libby, based on ESP analysis (linked to today's agenda) that shows a fill-and-spill situation in 7 out of 44 years under the operation the SOR requests.

Litchfield asked why the COE would draft for more space if the reservoir is already below its flood control elevation. Amy Reese (COE Seattle) addressed the role of VARQ flows and presented data linked to today's agenda. The 44 weekly ESP traces indicate that this is an 80% flow year. Obviously, with the large amounts of snowpack in the basin, 2008 won't turn out to have 80% of historic flow volume. To establish VARQ (or minimum) flows in this situation, the COE considers ESP traces, river forecast volumes, COE forecasts, remote sensing information, and all other forms of analysis available. The COE has not decided whether to go off VARQ flows, but is considering it. In 50% of the years on record, there would be no impact of refilling Grand Coulee an average of 1 foot, while in the other years, refilling would provide flood control benefits.

The COE's recommendation is to increase flows in accordance with SOR 2008-2 up to 9 kcfs and use one additional unit, followed by VARQ flows until the freshet starts. The COE won't commit to providing the extra flows until the freshet starts because it could be delayed until June.

At this point, Litchfield presented an alternative proposal: In exchange for Montana's agreement to draft Libby now and support downstream flows, the region would agree to implement the BiOp requirements for operating Libby and Hungry Horse in July and August. This request arose from Montana's desire not to repeat the 2007 drawdowns of Libby and Hungry Horse as part of the court-ordered 2007 operations rollover this year. While Montana's preferred operation is recommended by the BiOp and ISAB review, and NOAA has supported it for years, implementation requires regional consensus which hasn't been achieved.

The parties stated their positions on SOR-2008-2.

NOAA – Wants the SOR implemented to the best of the COE's ability. Supports the Montana plan for summer operations of Libby and Hungry Horse, but would need consensus to implement it.

COE – Has concerns about peak flows and the possibility of a double peak between salmon and sturgeon flows. Willing to hold off on refilling Albeni Falls while continuing to draft at Grand Coulee, and will monitor the situation at Albeni Falls closely. It may be necessary to decrease Albeni Falls outflows for local flood control purposes. The Corps will also increase Libby outflows to 9 kcfs as requested by the SOR. *{Supplemental Note: Libby outflows increased to 9 kcfs at 1800 hours on May 2nd}*

USFWS – Can't commit to SOR-2008-2 until the impact on sturgeon has been addressed. In terms of meeting minimum flows specified in the BiOp, it makes sense to move ahead with this SOR.

BPA – It’s possible to reach 180 kcfs flows at McNary through operation of other reservoirs. However, if inflows are uncertain, the question is: how deep should Grand Coulee be drafted?

BOR – Would like to minimize the draft at Grand Coulee, especially in light of navigation concerns voiced by the Colville Tribe. Accepts the need for flow augmentation for fish migration. Believes 180 kcfs is a reasonable weekly average flow objective at McNary. Agreed with BPA that inflows are a wild card.

Between now and next Friday’s TMT call, Libby operations will remain at at minimum outflows of 4 kcfs. Grand Coulee will be operated to support flows of 180 kcfs at McNary downstream. Litchfield said he will prepare a statement of Montana’s position for possible IT review if Friday’s meeting doesn’t lead to a resolution.

8. Next Meetings

TMT scheduled a conference call at 1 pm Friday, May 2, to address SOR-2008-2 after the sturgeon recovery team has had time to confer on the impact to sturgeon. TMT also scheduled a tentative IT meeting the following Monday if the Friday call doesn’t lead to a consensus on Libby operations. The next regular TMT meeting will be in person on May 7. This summary prepared by consultant and writer Pat Vivian.

Name	Affiliation
Paul Wagner	NOAA
Dave Wills	USFWS
John Roache	BOR
Robyn MacKay	BPA
Tom Le	Puget Sound Energy
Jim Adams	COE
Dan Feil	COE
Rudd Turner	COE
Lynn Melder	COE Seattle
Steven Hall	COE
Scott Boyd	COE
Jim Litchfield	Montana
Cathy Hlebechuk	COE
Carolyn Fitzgerald	COE
Dave Benner	FPC
Richelle Beck	DRA
Holli Krebs	Bear Energy
Jennifer Miller	Susquehanna
Amy Reese	COE Seattle
Sharon Fitzgerald	COE Seattle
Brian Marotz	Montana

Ivy Netter
Bryce Bodecker
Jeff Laufle
Margaret Filardo
Deanna Tevlich??
Tom Lorz
Dave Statler
Shane Scott
Greg Hoffman
Sherry XX
Brian Clark
Kyle Dittmer

Puget Sound Energy
Highland Energy
COE
FPC
Spokane Tribe
CRITFC
NPT
PPC
COE Libby Dam
Colville Tribe
Colville Tribe
CRITFC