

COLUMBIA RIVER REGIONAL FORUM

TECHNICAL MANAGEMENT TEAM

March 23, 2011

FACILITATOR'S SUMMARY NOTES

Facilitator: Robin Gumpert

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 Meeting Minutes/Notes

TMT members reviewed the 3/9 Official Meeting Minutes and Facilitator's Notes. With no suggested changes, they were considered final.

Water Supply Forecast Update

Steve Barton, COE, shared an update on water supply. Compared to the March final forecasts, which assumed 110% of normal, actual precipitation values for the period March 1 -21 for various points within the Columbia River Basin were:

- Canadian Upper Columbia – 146% of normal
- Kootenai – 206%
- Pend Oreille – 180%
- Clearwater – 138%
- Columbia above Grand Coulee – 180%
- Snake above Ice Harbor – 183%
- The Dalles – 191%
- Snow – SNOTEL sights showed normal to above normal throughout the basin; near normal in the Canadian basin

Steve also shared information about the mid-month forecast, noting that no new snow assumptions were added and that the March precipitation assumption for the second half of March was 95% of normal. Given those assumptions, the Grand Coulee April-September forecast was 69.2 MAF; The Dalles April-August was 97.3 MAF, 105% of normal; Libby April-August was 7.13 MAF; Lower Granite April-July was 22.5 MAF, 104% of normal; and Dworshak was 2.91 MAF, 110% of normal.

TMT members noted that precipitation was predicted to hit the basin over the next 10 days, and possibly some warming at lower elevations which may result in some runoff – all will be monitoring the conditions closely. In response to a question, Steve said Grand Coulee April flood control elevation targets would be influenced by the forecasts but that nothing had been officially set at this time.

Vernita Bar Update

Russell Langshaw, Grant County PUD, shared an update on Priest Rapids' tailrace temperatures and emergence operations, noting that current projections show the end of emergence will be around June 19. Russell said operations thus far were going well, that constraints were ranging 30-40 kcfs and there had been just one minor exceedance on 3/13 when flows dropped just below the band. Stranding and entrapment studies were in their 3rd week and so far, Russell said, the program was going well. One Chinook had been observed entrapped, and, that number was likely to increase further into the migration season. Russell concluded with a note that field crews were finding that the new web based modeling tool was helping them focus/streamline their work.

Fish Operations Plan

Steve Barton, COE, shared an update on the 3/22 version of the FOP which had been submitted to the court and was posted to today's agenda. Rick Kruger, Oregon, raised three comments:

- Oregon had remaining concerns about the John Day spill test being planned and would discuss those concerns with SRWG over the next couple weeks as the design details get fleshed out. Concerns included schedule, number of fish released and description of the test as a performance standard instead of spill treatment comparison test.
- Spill adjustment conditions, e.g. low runoff and navigation safety, were inappropriately listed under 'TDG Management'. Why was this done? COE response: This was an oversight in the document. The heading should read 'Management of Spill for Fish Passage'.
- Changes in spill for 'non-commercial' navigation had previously been included under the general, Lower Monumental and Lower Granite sections, and in the final was included under Lower Granite. Why? How has this issue been coordinated through the region? What is the process for making spill adjustments to accommodate navigation? The concern is that there will be blanket approval for altering spill to accommodate any vessel. COE response: Health and safety is a priority for the COE and they will use flexibility in operations to meet that priority. That said, the inclusion of this language in the FOP was an oversight. It was carry over language from a change form agreed to and developed at FPOM in 2010 for the Fish Passage Plan. The intent is to coordinate any proposed change to spill for navigation via the TMT, as has been done in the past.

Action/Next Steps: Steve will share the two edits with the authors of the FOP and inquire as to how changes will be made to the document, given that it has already been submitted to the court. He will loop back to TMT at the next meeting, or sooner via email.

Dworshak Operations

Steve Barton, COE, reported that Dworshak was operating 14.7 kcfs outflows and 7.3 kcfs inflows, was at elevation 1473.3' and was targeting 1451.4' by mid-April. He reminded TMT of the email sent last week confirming approval of the Walla Walla District COE deviation request allowing the project to not meet its end of March elevation target. With the increase in flows, Steve said there may be a need to increase

outflows even more and, while TDG had not exceeded 110% up to this point, it was a real possibility over the coming weeks. Walla Walla's Gunnar Leffler confirmed that TDG had not been exceeded and had actually gone down some so project flows would be increased. That said, he reiterated that TDG exceedances might occur. The various water supply forecasts for Dworshak ranged from 3.3 MAF to 2.93 MAF to 3.1 MAF.

Spill Priority List

Scott English, COE, shared a draft spill priority list that was linked to this agenda item and also directed TMT's attention to the link from the home page that includes water quality information with a link to the policy for setting the spill priority list. Paul Wagner, NOAA, on behalf of FPAC, said the salmon managers had developed a version to share with the COE but that they had been working from an older version. The two lists needed to be reconciled.

TMT discussed whether and how to include the Mid-C projects considering they are not managed for TDG by the COE but do have a water quality impact on the system. The COE is working with the PUD coordinator to gather data from each of the PUDs that can be added as useful information to the list. One option suggested today was to separate the Mid-C data on to a separate table. TMT also discussed the placement of Chief Joseph on the list, in light of the flow deflectors now fully installed and being utilized. At this point, the COE shared its preference for leaving this project toward the bottom of the list.

Action/Next Steps: Scott English will share information and an updated draft spill priority list with FPAC for their 3/29 meeting. TMT will revisit the spill priority list during a TMT conference call on 3/30.

BPA Emergency Actions Plan

TMT spent some time reviewing the Emergency Actions Plan, attached as Appendix 1 to the Water Management Plan. General comments included: The pre-emptive actions list looks good; Little Goose has a 'TSW' not 'RSW', and increasing BON PH1 to operate outside 1% might be removed from the list depending on a pending change form being developed.

Action/Next Steps: In order for BPA to confirm regional review on this document, FPAC agreed to discuss the list at an upcoming meeting and bring forth any questions or suggested changes to a later TMT meeting. This item will be added to the 4/20 TMT agenda.

Operations Review

Reservoirs – John Roache, Reclamation, reported on projects: Grand Coulee was at elevation 1253.5' and operating for drum gate maintenance. The project may draft significantly for flood control in April – currently the April 30 flood control target is 1237' and John said Reclamation was monitoring water supply conditions very closely, noting that the flood control target could drop 10 feet or more depending on the final April water supply forecast. Hungry Horse was at elevation 3505.8', with 8.3 kcfs outflows, targeting to be at or below flood control elevations. Again, he noted, the project

may need to increase flows based on future precipitation and water supply forecasts. Steve Barton, COE, reported on projects: Libby was at elevation 2371.0', with 2.9 kcfs inflows and 18 kcfs outflows. The project was targeting elevation 2364.3' by the end of March. Albeni Falls was operating at 24.6 kcfs inflows and 26.4 kcfs outflows, and was currently at elevation 2055.6'. Dworshak was at elevation 1473.3', with 7.3 kcfs inflows and 14.7 kcfs outflows. Lower Granite day average outflows were 72.3 kcfs/72.0 kcfs weekly average; Priest Rapids day average flows were 127.8 kcfs/114.0 kcfs week average; McNary day average outflows were 184.3 kcfs/209.3 kcfs week average; and Bonneville day average outflows were 204.7 kcfs/227.4 kcfs week average.

Fish – Paul Wagner, NOAA, reported that juvenile sampling had begun for the season at Bonneville and at the traps in the tributaries. So far, most counts were hatchery releases. Bonneville saw 9,400 yearlings and about 20,000 subyearlings; some coho and few steelhead; and 1,700 lamprey. Adult Chinook counts at Bonneville were 77; and 2,606 holdover Steelhead were counted at Lower Granite. The adult run forecasts were looking strong for 2011. Russ Kiefer, Idaho, reported on kokanee entrainment concerns and the challenge to finding options for addressing them. He added that the additional snow pack in the region would be good for those kokanee in the reservoir.

Power system – Nothing to report at this time.

Water quality – Scott English, COE, reported that more fixed monitoring stations were coming on line.

Next Meeting, Conference Call March 30, 9:00 am

Agenda items include:

- Dworshak operations update
- Spill priority list reconciliation
- MOP operations
- FOP process feedback

April 6 Face to Face Meeting

Agenda items include:

- Hanford Reach Update
- Water Supply Forecasts
- Dworshak Operations
- Grand Coulee Operations
- Snake River Spill Upper Snake Flow Augmentation Estimates (tentative)
- Chum Emergence (?)
- Operations Review
- Other?

Columbia River Regional Forum
TECHNICAL MANAGEMENT TEAM OFFICIAL MINUTES

March 23, 2011
Notes: Pat Vivian

1. Introduction

Today's TMT meeting was chaired by Steve Barton, COE, and facilitated by Robin Gumpert, DS Consulting. Representatives of USFWS, BPA, COE, Oregon, NOAA, BOR, Montana, Washington, the Colville Tribe, Idaho, CRITFC/Umatilla Tribe and others attended. This summary is an official record of the proceedings, not a verbatim transcript. Any questions or comments should be directed to the TMT chair.

2. Review Meeting Minutes for March 9, 2011

There were no comments today on either the facilitator's notes or the official minutes for March 9, so they were deemed final.

3. Water Supply Forecast Update

Precipitation: Steve Barton reported. In contrast to the RFC March final forecast, which assumed 110% of normal precipitation for the rest of March, actual precipitation levels for March 1-21 were much higher:

- Canadian upper Columbia – 146% of normal
- Kootenai – 206% of normal
- Pend Oreille – Spokane – 180% of normal
- Clearwater – 138% of normal
- Columbia above Grand Coulee – 180%% of normal
- Snake above Ice Harbor – 183%% of normal
- The Dalles – 191% of normal

Snow pack: All basins except one in central Washington are experiencing normal to above normal snow pack. Canadian snow pack is around normal, ranging from 91% of normal near Revelstoke Dam to 116% of normal in the Okanogan. Basins with the heaviest snow pack are:

- Flathead – 130% of normal
- U.S. Kootenai – 125% of normal
- Clearwater – 111% of normal

The RFC mid-month forecast issued March 17 includes observed precipitation through March 14, but not snow, Barton noted. The mid-month forecast assumes 95% of normal precipitation for the rest of March, despite the

fact that precipitation in the first 3 weeks of March was much higher than expected. Highlights of the RFC mid-month March forecast are:

- Grand Coulee – April-September, 69.2 maf
- The Dalles – April-August, 97.3 maf, 105% of normal (January-July, 112 maf, 104% of normal)
- Libby – Apr-August, 7.13 maf, 114% of normal, (COE forecast is 7.1 maf)
- Lower Granite April-July, 22.5 maf, 104% of normal
- Dworkshak – April-July, 2.91 maf, 110% of normal,

Rick Kruger, Oregon, and Charles Morrill, Washington, both questioned the 95% of normal precipitation assumption, noting that a series of storms is predicted over the next 10 days. Barton recommended weighing the assumptions that went into the forecast in light of that prediction.

4. Vernita Bar Update

Russell Langshaw, Grant PUD, reported that temperatures have dropped below the mean values, with a normal warming trend for this time of year. If that trend continues, protections are expected to end around June 19. Operations have been going well, with constraints in the 30-40 kcfs range. The mean daily delta last week was 28.6 kcfs and constraints were 38.3 kcfs. There was a minor exceedance on March 13 when flows dropped 0.2 kcfs below the flow band.

Crews have been sampling for approximately three weeks and have found only one entrapment with Chinook to date, but the number of entrapped fish is expected to pick up as the number of juveniles increases. Grant PUD has a web-based model that targets sampling sites so the crews only visit sites that have experienced an elevation drop greater than 15 centimeters. This ensures they are efficient and only visit sites that had a large enough drop to create entrapments. This process is working very well. Langshaw will give another update on April 6.

5. 2011 Fish Operations Plan

The final spring FOP linked to today's agenda is the version filed with the court yesterday, Barton reported. The COE has not yet received a response from the court.

Rick Kruger, Oregon, made two comments for the record:

1. Oregon has a concern that pooling of control groups will introduce a bias in variability. The COE's initial proposal for a performance standards test at John Day at 30% spill drew objections from Oregon and the Nez Perce Tribe, so the operation was changed to a performance standards test at 30% and 40%. That's in 4-day blocks of 30% for 2 days then 40% for 2

days. To provide an adequate sample size for both spill treatments, the sample size has been doubled. However, the control group size has not doubled and will consist of fish from both the 30% and 40% spill group, thus Oregon's concern about the study validity.

2. With a minor change in the study design, it would be possible to analyze data to compare spill treatments with what's already planned, rather than do a performance test at John Day. Oregon believes the 30% and 40% blocks of 2 days each should be randomized in order to make the study more robust. Single-group analysis of fish spilled under both treatments would allow a spill comparison without the use of control fish. Kruger plans to raise this concern at SRWG.

Kruger also pointed out that the discussion of navigation safety, generation unit outages, power system emergencies and lack of power demand were listed in previous FOPs under Spill Operations, while in this FOP they're under TDG Management on page 2. Barton explained that was due to a reformatting error in moving back to the context of spring 2010. The corrected section should have been titled "Management of Spill for Fish Passage." Another correction has to do with 3 references to spill cessation for non-commercial navigation, 2 of which were deleted while 1 remains in the FOP. The COE intended to delete the reference to "non-commercial" navigation and the inclusion in the FOP was an oversight. Barton noted that the COE's first priority is always human health and safety on the river.

6. Dworshak Update

Dworshak is releasing 14.7 kcfs, with 7.3 kcfs inflows and an elevation of 1,473.3 feet, Barton reported. The April 15 elevation target is 1,451.4 feet per the deviation request, without which it would be 1,445 feet or about 6.4 feet lower than the deviation request.

The project has been discharging 13.4-14.5 kcfs on a steady trajectory to get down to the April 15 elevation. Barton gave TMT a heads-up that while it has been possible to manage to the deviation request and remain under the 110% state TDG standard to date, discharges might need to increase in the near future in order to meet flood control requirements. This could result in TDG exceedances. The current TDG reading at Dworshak is 106.4%, Laura Hamilton, COE, reported. Gunnar Leffler, COE Walla Walla, reported that TDG levels went down last night so the COE is planning to bump up releases while trying not to exceed the state standard.

There was no update to the COE official forecast of approximately 3,300 kaf, Barton reported. The RFC forecast is 2,930 kaf and the ESP median is 3,100 kaf. TMT will continue to discuss Dworshak operations as a standing agenda item through April.

7. Spill Priority List

Scott English, COE, presented the COE's initial spill priority list, which is linked to today's agenda. It can also be found via the TMT page on the RCC Water Quality Program page under Corps TDG Policies. The list is still under Action Agency discussion and will be modified, hopefully before the FPAC meeting on March 29. English asked for comments by March 28.

Paul Wagner, NOAA, said he used the typical spill priority order of Lower Granite, Little Goose, Lower Monumental, and the lower Columbia projects in project order as a starting point for last week's FPAC discussion. FPAC has since come up with a reordered list. Wagner said he will review the FPAC recommendations in light of the COE's published list and note whether changes are needed.

Barton said in response to general interest, the mid-Columbia projects are listed for informational purposes only. The COE doesn't manage gas through the mid Columbia and has no authority to spill at mid Columbia projects. Barton asked for TMT's preferences as far as displaying this information. Wagner said it would be useful to know in what order the mid Columbia projects are spilling and how it is affecting the federal system. The COE is working with the mid Columbia coordinator to add this information to the spill priority list. The mid Columbia projects are not necessarily in overgeneration mode when the federal system is overgenerating, and vice versa. Barton said the table will be updated daily with respect to values, while changes in the order of spill will occur only as a result of FPAC recommendations.

Tom Lorz, CRITFC/Umatilla, noted that Chief Joseph is currently at the bottom of the list and asked whether there's flexibility to move it around. At this time the COE prefers to keep it at the bottom of the list, and Lorz expressed the same preference. The COE will follow up on spill priorities with TMT in next week's conference call or via email.

8. BPA Emergency Action Plan

Paul Koski, BPA, asked for comments on the BPA emergency action plan for April-August. Wagner said he had reviewed it but didn't see it at a high priority issue for FPAC until summer. While a power emergency is less likely now than in summer, something could happen on the system to put us at capacity, Barton said. He urged people to review the plan now because in such a case the COE would have to follow the actions as they are listed. The plan was last updated on May 27, 2009. Today 2 potential changes were identified:

- Little Goose has a TSW not an RSW.

- CRITFC is in the middle of doing change forms to the Bonneville operation, so increasing generation at the 1st powerhouse might not be an option.

TMT will revisit the emergency action plan after FPAC has had a chance to review the list but no later than the end of April.

9. Operations Review

a. Reservoirs. Hungry Horse is at elevation 3,505.8 feet discharging 8.3 kcfs. Discharges are expected to remain that high or go higher in order to reach flood control targets.

Grand Coulee is at elevation 1,253.5 feet with a maximum elevation of 1,255 feet for drum gate maintenance. With a 4-5% increase in the inflow forecast at The Dalles, the Grand Coulee flood control target could drop from the current April 30 elevation of 1,237 feet to 10 feet lower or more. The early bird forecast, will be released March 31 but the “official” April 30 flood control target won’t change until sometime after the April final forecast is released, sometime after April 7. Reclamation will use the early bird forecast to help plan early April operations at Grand Coulee, John Roache, BOR, reported.

Libby is at elevation 2,371 feet, with 2.9 kcfs inflows and 18 kcfs releases, drafting toward a March 30 flood control elevation of 2,364.3 feet. Albeni Falls is at 2,055.6 feet, passing inflows of 24.6 kcfs with 26.4 kcfs releases. Dworshak is at elevation 1,473.3 feet, with inflows of 7.3 kcfs and releases of 14.7 kcfs as discussed earlier.

Lower Granite is discharging 72.3 kcfs with a weekly average discharge of 72.0 kcfs. Priest Rapids is discharging 127.8 kcfs with a weekly average discharge of 123 kcfs. McNary is discharging 184.3 kcfs with a weekly average of 209.3 kcfs. Bonneville is discharging 204.7 kcfs with a weekly average of 227.3 kcfs.

b. Fish. Juveniles: Paul Wagner, NOAA, reported that most counts above Bonneville at this point reflect hatchery releases. Wild and hatchery fish are both passing Imnaha and Grande Ronde. Yearling Chinook, largely hatchery releases, are passing Bonneville now. There have been some releases of coho, while it’s too early for steelhead passage at Bonneville. A steady number of lamprey are passing.

Adults: It’s still early in the season for adults, so there was not much to report. Sea lions are present at Bonneville and 70-73 chinook have been counted there. Steelhead adults haven’t arrived yet; those moving now are winter holdovers passing Lower Granite. Charles Morrill said Washington is forecasting a spring run of around 200,000 adult spring chinook. Russ Kiefer affirmed that

estimate and reported recent problems with kokanee being entrained at Dworshak. In response, Idaho has removed fishing limits on kokanee below the dam. The downside of this is those remaining will be bigger predators.

c. Power System. There was nothing to report today.

d. Water Quality. Scott English reported that fixed monitoring stations are being brought on line. A table available via the TMT site gives an overview of TDG values throughout the system.

3. Next Meetings

The next regular TMT meeting will be on April 6, with a conference call on March 30 to discuss Dworshak and Hungry Horse options and the spill priority list. Subsequent TMT meetings are scheduled weekly beginning April 6.

<i>Name</i>	<i>Affiliation</i>
Steve Barton	COE
Paul Koski	BPA
Rick Kruger	Oregon
Doug Baus	COE
Paul Wagner	NOAA
John Roache	BOR
Nick Lane	BPA
Tim Heizenrader	Centaurus
Rich Hilt	COE
Kathy Rogers	COE
Steve Hall	COE
Karl Kanbergs	COE
Laura Hamilton	COE
David Wills	USFWS
Scott English	COE
Jim Litchfield	Montana
Charles Morrill	Washington
Tom Lorz	CRITFC/Umatilla

Phone:

Sheri Sears	Colville Tribe
Alex Ibarra	Grant PUD
Shane Scott	PPC
Dave Benner	FPC
Richelle Beck	DRA
Kristian Michelson	COE
Rob Allerman	Deutsch Bank
Barry Espenson	CBB

Russ George
Bruce McKay
Glen Trager
Kara Kelly
Mike Butchko
Doug Vine
Tom Le
XX
Russ Kiefer
Eric Trautman
Gunnar Leffler

WMC
Consultant
Iberdrola
GP Morgan
Powerex
Thompson Reuters
Puget Sound Energy
Colorado Energy
Idaho
BP
COE