

COLUMBIA RIVER REGIONAL FORUM

TECHNICAL MANAGEMENT TEAM

February 3, 2010 Meeting

FACILITATOR'S SUMMARY NOTES

Facilitator: Erin Halton

Notes: Christa Leonard

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 for January 20, 2010

Doug Baus, COE, noted that edits to Steve King's presentation were made to both the facilitator's notes and the official meeting minutes. The correct versions have been posted to the web. There were no other comments or changes to either the facilitator's notes or the official meeting minutes and both sets are considered final.

The Dalles Spillwall Project

Pat Duyck, COE, updated TMT members on the project's progress explaining that the recent executive partnering meeting with the contractor identified the work as being ahead of schedule, as opposed to this time last year. He reported that all pre-cast blocks have been placed and that anchor installation (118 total) is to be completed this week. 80-85 are fully stressed at this point. Duyck said that they have replaced slabs though number 11 (of 15), with 200' remaining. The bulk of the heavy work is expected to be completed at the end of February, with finish and cleanup work expected to be done by mid-March and pool restriction lifted at that time. Duyck also noted that he was confident that biological testing will meet the BiOp standard and that avian predation will continue to be monitored. He added that calculations for the project assumed a mixed zone for TDG and the COE is working with Mike Schneider as they draft their management plan for any potential TDG issues that may arise.

Action/Next Steps: Duyck will report back to TMT as appropriate. This item may be on the agenda for the next TMT meeting on 2/17. TMT members may have the opportunity to visit the project at a future date.

Planning for 2010 Spring Operations

Steve Barton, COE, noted that the February early bird forecasting is pointing toward a dry spring with general reduction in volume across the board. He detailed the following projects: Grand Coulee is at 79-80% of normal, The Dalles 72%, Libby 75%, Lower Granite 61% and Dworshak at 64% of normal. An updated COE forecast will be released on Friday, 2/5.

Kyle Dittmer, CRITFIC, presented forecast data from the Australian Bureau of Meteorology and NOAA, which (per the Southern Oscillation Index [SOI] shows El Nino continuing through spring. Consequently, the water supply is expected to decrease.

Barton continued on to discuss spring operations. There are two upcoming operations at Bonneville: one scheduled for April 2³rd, when a low pool operation will be required for greasing of the dogging slots at all spillways. The second is line outage maintenance at Bonneville transmission on April 10th for up to 10 hours from 7:30-1700. The operation requires that units numbered 11-18 and fish units 1 and 2 be out. The operation will require forebay flexibility and is not expected to conflict with the spring fish passage season.

Action/Next Steps: This item will be on the agenda for the 2/17 TMT meeting.

Water Management Plan Spring/Summer Update

Steve Barton, COE, noted that there is no update at this time as he is waiting on some clarity from the COE.

Action/Next Steps: This item will be on the agenda for the 2/17 TMT meeting.

Operations Review

Reservoirs: Libby was at elevation 2408.35', with inflows of 2.4 kcfs and outflows of 4 kcfs. Albeni Falls was at elevation 2051.48', passing inflows of 13.1 kcfs. Dworshak was at elevation of 1514.67' with inflows of 1.6 kcfs and outflows of 1.2 kcfs.

Other: Paul Wagner, NOAA, asked why outflows were reduced from 1.6 to 1.2 kcfs. Steve Hall, COE, explained that Unit 1 is operating efficiently at 1.2 and that discharge was reduced in order to refill as much as possible in preparation for Spring operations. He noted 106-108 TDG levels downstream, which is still 2% below the state limit. He also shared that a preliminary forecast is showing 63% of normal.

McNary average flows were 100 kcfs and Bonneville average flows were 105-110 kcfs. Grand Coulee was at elevation 1285.4'. Hungry Horse was at 3530.07' with outflows of 2.7 kcfs. BPA noted that Grand Coulee was operating very conservatively, staying close to chum minimums and preserving water for Spring Operations.

Fish: Paul Wagner, NOAA, shared they are tracking the chum emergence time frame. He noted warmer than average river temperatures were observed upstream in the Hanford Reach. He also speculated that the lower river flow that has occurred thus far this year may have allowed more ground water inflow to the rearing area, possibly resulting in higher incubation temperatures in the chum spawning area.

Power System: Tony Norris, BPA, noted that there is nothing to report but did share that installed wind turbine capacity is at 2800 mega watts. He reviewed an online wind generation graph that tracked production since 1998. The graph showed a sharp increase in capacity since October 2008.

Water Quality: Scott English, COE, noted that there are no issues to report but did share that the COE is working with the COE's Product Delivery Team and Pat Duyck to study and test the effects of The Dalles Spill Wall Project on TDG levels.

TMT Schedule: The next TMT meeting will be: **face-to-face on 2/17/2010 at 9:00am at the regular COE conference room.**

Agenda items will include:

- Notes Review
- The Dalles Spillwall Update- TBD
- 2010 Operations- Updated weather and flood control forecasts
- Water Management Plan Spring/ Summer Update
- FOP Update
- Operations Review

**Columbia River Regional Forum
Technical Management Team Meeting
February 3, 2010**

1. Introduction

Today's TMT meeting was chaired by Steve Barton (COE) and facilitated by Erin Halton (DS Consulting) with representatives of USFWS, NOAA, BPA, COE, CRITFC, BOR, Idaho, Oregon, Washington and others participating. 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 for January 20, 2010

Steve King (RFC) edited the coverage of his presentation on weather forecasting on January 20, Doug Baus (COE) said. The revised version is posted to the TMT web page in both the facilitator's notes and official notes. There were no additional comments on meeting notes today.

3. The Dalles Spill Wall Project and Related Maintenance

Pat Duyck, COE project manager of The Dalles spill wall construction, gave a progress report as well as a glimpse of work ahead for the lower Columbia River projects.

Spill wall construction is proceeding ahead of schedule, having come a long way since last year's crane failure. The precast blocks are in place, and all 118 anchors will be installed by next week. The contractor is working now on the last 200 feet of the wall. Heavy construction is expected to wrap up by the end of February, with clean-up and all remaining in-water work completed before the end of March, almost a month ahead of schedule. The COE will probably lift the restriction on Bonneville forebay to facilitate spill wall construction by mid March. Demobilization of the construction site should be complete by March 15.

Greasing of the spill gates at Bonneville needs to occur between the end of spill wall construction and before spill season starts, Scott Bettin (BPA) noted. The Dalles operation should be able to accommodate the spill gate maintenance by the end of March or early April, Duyck replied. Spill gate maintenance is tentatively scheduled for April 2-3. It ties into another issue, the Bonneville 2nd powerhouse unit outage, discussed further today under agenda item 4 below.

When spill wall construction is complete, the COE plans to conduct biological testing to confirm that the project now meets BiOp performance standards. If not, the COE is prepared to pursue additional forebay or spillway improvements.

Two other future areas of investigation are avian predation and TDG impacts of the spill wall. Installation of a major avian array in the John Day tailrace raises concerns about whether the birds will move downstream to The Dalles tailrace. The COE plans to monitor avian predation throughout 2010, with a goal of constructing a similar avian array there. Plans are also underway to verify that the new spill wall doesn't generate unacceptable levels of total dissolved gas. The most challenging area with regard to TDG management will be the mixing zone where spill crosses powerhouse outflows. Previous modeling of the smaller wall in bays 6 and 7 assumed that flows in the area will be mixed. The COE needs to verify that in order to predict TDG levels accurately using existing models. It appears that gas will be a problem with flows above 120 kcfs, but it's hard to test that assumption until the wall is complete. The COE's reservoir control center is taking the lead responsibility on this work, Duyck said. Mike Schneider (COE), a regional expert in gas management, is involved. The COE will keep TMT updated on avian predation and TDG management at The Dalles.

Halton offered to coordinate plans for a TMT field trip to observe the new wall in action sometime after spill season starts April 10.

4. Planning for 2010 Spring Operations

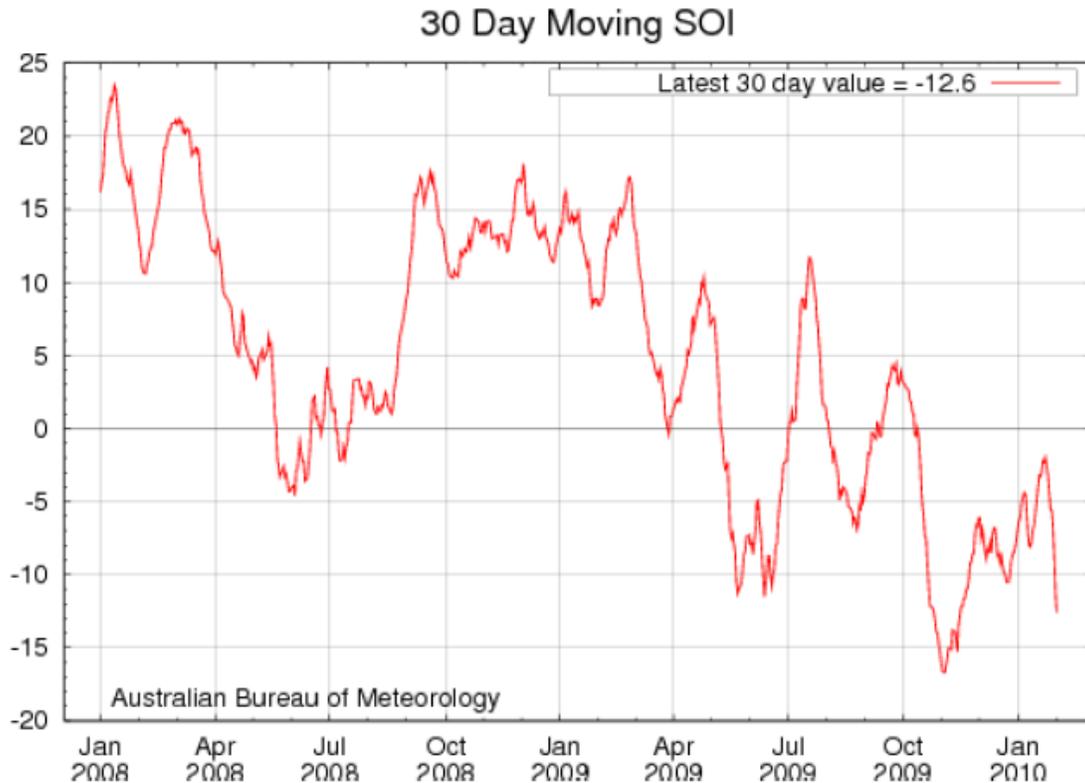
Snowpack this year looks to be even lower than previously predicted, raising serious concerns about the dwindling regional water supply. Barton gave TMT the latest data from February RFC early bird forecasts:

- Grand Coulee – 70-80% of normal for most of fish passage season
- The Dalles – 70% of normal, or 77.1 MAF for January-July
- Libby – 75% of normal
- Lower Granite – 61% of normal for April-July
- Dworshak – 64% of normal for April-July
- Canada weather stations – 79-80% of normal

Another RFC forecast will be available on February 5, and the COE forecast for Dworshak and Libby should be available soon after that. The next TMT meeting on February 17 will be the right time for detailed discussion of flood control draft targets and seasonal flow objectives for this year, Barton said.

The Australian Bureau of Meteorology, which monitors the Southern Oscillation Index of temperatures in the Pacific Ocean frequently, also predicts bad news, Kyle Dittmer (CRITFC) reported. The SOI, previously hovering around neutral, has gone negative which is predictive of the drier, warmer weather associated with El Nino. Barton asked whether temperatures off the west coast are following that trend, per a comment Dittmer made at TMT recently. The Pacific Marine Environmental Laboratory in San Diego reports that Pacific water have warmed up, Dittmer replied. It remains to be seen how this trend will affect upwelling, which is critical to salmon survival. We can expect the water forecast

to deteriorate further and should operate the system conservatively to store as much water as possible by April 10, Dittmer advised.



Discussion then moved to scheduling of upcoming work at Bonneville. The 2nd powerhouse line outage is scheduled for April 10 from 7:30 am to 5 pm. All other system outages are scheduled around that date until the actual date of spill wall completion is known. The outage will require units 11-18 in the powerhouse 2 to go to zero generation along with fish units 1 and 2. It also will require forebay flexibility, which means that spill wall construction must be finished first. The switch to using powerhouse 1 for 10 hours on April 10 is expected to have no measurable effect on the system's ability to meet spring spill targets, Barton said.

Greasing of the dogging slots in the Bonneville spill gates will require a low pool operation scheduled for April 2-3. This essential maintenance has been postponed several times and needs to be done before 2010 spill season starts. The COE is looking for ways to get the 2nd powerhouse maintenance done outside of fish passage season if possible. Rick Kruger (Oregon) asked what constraints keep that from happening. The line can't be taken out of service earlier without disrupting station service at the other Columbia projects, Barton replied. The purpose of the line outage, Bettin explained, is to put safety precautions into place to prevent a line failure. Kruger asked whether flows would be stored in the river for this operation. Local storage should be sufficient at Bonneville, Barton replied. There was agreement that routing flows through the

1st powerhouse has some fish management implications. TMT will discuss these plans further at its next meeting February 17.

5. Water Management Plan – Spring/Summer 2010 Update

There was nothing to report today. The COE is waiting for more definitive information on water conditions this spring before developing a water management strategy for spring and summer passage season. TMT will revisit the WMP spring/summer update at its next meeting.

6. Operations Review

a. Reservoirs. In response to a request from Dave Wills (USFWS), the COE will provide current flood control elevations for each project at future TMT meetings as part of the regular operations review. Flood control elevations are posted at the TMT site at <http://www.nwd-wc.usace.army.mil/report/colsum/>.

Libby is at elevation 2,408.35 feet, with inflows of 2.4 kcfs and outflows at the 4.0 kcfs minimum. The end of February flood control elevation is 2,429.2, John Roache (BOR) reported. Albeni Falls is at elevation 2,051.48 feet, passing inflows of 13.1 kcfs.

Dworshak is at elevation 1,514.67 feet, with inflows of 1.6 kcfs and discharges of 1.2 kcfs. Because inflow predictions are so low, and Dworshak reservoir is about 30 feet below flood control elevation now, the COE reopened an earlier inquiry and found a way to make Dworshak unit 1 function smoothly at a flow of 1.1 kcfs instead of the current 1.6 kcfs minimum. An additional 100 cfs is being released for the fish hatcheries, for a total discharge of 1.2 kcfs. At this point the potential reduction applies to unit 1 only, Steve Hall (COE) said. The goal is to minimize discharge and maximize potential for refilling the reservoir. The current COE Dworshak forecast – unofficial at this point – is 63% of normal.

Grand Coulee is at elevation 1,285.4 feet, operating conservatively to maintain chum flows while preserving as much water as possible. Hungry Horse is at elevation 3,530.07 feet, with discharges of 2.7 kcfs to meet the Columbia Falls minimum.

There was no report today on inflows at Lower Granite. The 7-day average inflow at McNary is 100 kcfs. Bonneville is passing inflows of 105-110 kcfs as needed to maintain the minimum tailwater elevation of 11.5 feet for chum.

b. Fish. It's the time of year to track chum emergence timing closely, Wagner said. It could be an important factor this year if the system is to meet all BiOp objectives. Ending chum protection flows would be a useful tool to conserve water for spring spill, Tony Norris (BPA) noted.

c. Power System. The Bonneville balancing authority area now has 2,800 aMW of installed wind turbine capacity. Actual power production has been

very low as the wind hasn't been blowing. Wind capacity can be tracked via the TMT web page at <http://www.transmission.bpa.gov/Business/Operations/Wind/>.

d. Water Quality. Scott English (COE-RCC) will work with Pat Duyck to give TMT future updates on water quality at The Dalles spill wall.

9. Next Meeting

The next regularly scheduled TMT meeting will be February 17. Potential agenda items include an update on The Dalles spill wall construction (including biological testing); the plan for spring 2010 operations (including flood control updates); a WMP spring/summer update; and a status report on the Fish Operations Plan spring/summer update. This summary prepared by technical writer Pat Vivian.

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