

COLUMBIA RIVER REGIONAL FORUM

TECHNICAL MANAGEMENT TEAM

March 31, 2010

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 of Meeting Minutes for March 17rd and 24th, 2010

Paul Wagner, NOAA, has some changes to the official meeting minutes that he will submit at the next face to face meeting. No other changes to the facilitator's summary or official meeting minutes were made and both sets will be considered final after the aforementioned corrections are made.

Updated Weather and Flood Control Forecasts

Karl Kanbergs, COE, directed TMT to two pages of data, both posted as links to the agenda. He reported that the snow/water equivalent conditions had somewhat improved. The Cascades were 50-69% of normal and snow pillows are not dropping at this point but are almost catching up to average levels. While the forecast calls for above average precipitation for the first few weeks of April, a major impact on the Columbia is not expected as NW Oregon is still below average. He also reviewed NWRFC Current Snow Conditions, reporting that current snow conditions are 75-90% of normal for Canada. The early bird forecast was due to be released on 4/1.

Hanford Reach Update

Russell Langshaw, Grant County PUD, reported that operations have been uneventful since his last update. He reported that 3/19 had a notable daily delta of 28.7 kcfs, but that overall conditions have stayed well within the 30 kcfs constraint. Langshaw said that conditions are at 740 temperature units from the end of spawning, so another 250 temperature units are expected before the emergence period.

Action/Next Steps: Langshaw will present updated information at the 4/14 TMT meeting.

Dworshak Release

Dave Wills, USFWS, reported that given the amount of recent precipitation at the project and that the mainstem Clearwater River is expected to peak tonight (3/31) at 12kcfs, the Hatchery would like to release 1.1 million smolts tonight to take advantage of this increased flow and turbidity. The Water Management Plan calls for bringing flows up by 5 k to provide increased flows over a 6 hour period. Paul Wagner, speaking on behalf of the Salmon Managers, said that this item was discussed at FPAC and members were in support of the operation.

Action/Next Steps: Doug Baus, COE, said that the operation will move forward as requested today, Wednesday 3/31 between the hours of 6:00 and midnight.

2010 Operations

Doug Baus, COE, reported on current operations at Bonneville:

- **Bonneville Powerhouse 2 Corner Collector Operations:** Baus shared that the operation has been challenging given the need to balance kelt passage with TDG levels at Warrendale. He noted that the B2CC is currently open and that the COE planned to grant the NOAA request to open the ice and trash sluiceway later in the day Powerhouse 1. Scott Bettin, BPA, reminded TMT that the corner collector is scheduled to be off for maintenance during a ten hour window beginning at 0700 on April 10th. Baus noted that next year the COE is hoping to automate the corner collector which would simplify the on/off operation. He further noted that the TDG waiver goes into effect tomorrow 4/1, so there will be no need to stay under the required 110% and the corner collector can be open around the clock. TMT members had no question regarding the operation.
- **Low Flow & Spill Operations:** Baus noted that the low flows observed this year have been a challenge to operations. Lower Columbia River spill begins on 4/10 and April flows at Bonneville are estimated to be in the range of 108.1 kcfs. Karl Kanbergs, COE, noted that Ice Harbor flows will likely be at 30-45 kcfs for April. Snake River spill begins 4/3 at one minute past midnight. Spill levels are expected to be short this season. Spill is normally at 45 but the COE cannot provide a full volume of spill due to the low water year. Laura Hamilton, COE, added that most projects will be on minimum generation during spill season.

Russ Kiefer, ID, shared that FPOM came to an agreement on triggers for Little Goose operations during spill season regarding the surface weir. TMT members noted that this was a well coordinated effort and the surface weir will be in operation for most of the season. Rick Kruger, OR, shared that there is a regional coordination call planned for Thursday 4/1 at 0800 to discuss Bonneville spill operations.

Action/Next Steps: Doug Baus, COE, will post the Little Goose change form order to the draft 2011 Fish Passage Plan (as it will be incorporated into next year's plan) to the website as soon as possible. TMT members can also email Doug directly for a copy. TMT will discuss the results of the Bonneville Spill regional call at the 4/7 meeting.

2010 TDG reporting

Scott English, COE, referred TMT to a power point presentation posted as a link to the agenda that provided detail on TDG Instance Types. He shared info that helps define how the COE classifies different types of "conditions" and "instances". The presentation covered the following topics: Water Quality Standards, TDG definitions, COE policies surrounding TDG issues, and the OR/WA state waiver processes/standards. Laura Hamilton, COE, clarified that the COE is currently following the 2006 BiOp criteria, due to the court-ordered rollovers. (If the 2008 BiOp is approved, then the COE will commence implementation of WA's 2006 change and OR's 2009 change to water quality

criteria.) English also reviewed the COE's TDG instance reporting process and detailed the various conditions and exceedances types. TMT members thanked the COE for their presentation.

Emergency Actions List

Paul Wagner, NOAA, reported that the Salmon Managers reviewed the current Emergency Actions List and had no recommendations for changes at this time. He noted that Priest Rapids was brought to the top of the list for the Initial Spill Priority List. The Emergency Actions List is posted as an appendix to the Water Management Plan posted on the TMT website.

Operations Review

Reservoirs: Grand Coulee was at elevation 1278.15' and meeting Vernita Bar protection. Hungry Horse was at 3520.55', with .8 kcfs outflows and filling very slightly for the first time this season. Libby was at elevation 2403.5', with 3.5 kcfs inflows and 4.0 kcfs outflows and drafting slightly. Albeni Falls was at 2051.8' and passing outflows of 13.5 kcfs. Dworshak was at elevation 1524.7' with inflows of 9.5 kcfs and outflows of 1.2 kcfs; the Dworshak pool filled almost 1' on 3/30, but will still have a challenge in filling this year. Updates refill probability estimates will be discussed at the next TMT meeting. Lower Granite flows were at 35.4 kcfs, McNary flows were at 96 kcfs and Bonneville flows (due mostly to Priest Rapids flows) were at 129 kcfs.

Fish Paul Wagner, NOAA, directed TMT to the Fish Passage Center's smolt data/ two week passage index. He reported for juveniles: yearling Chinook were at 533, with 2500 total on the Snake River. Lower Granite had 0-10 fish but numbers are expected to pick up soon. Bonneville had 300. Subyearlings were in the 500-600 per day range, totals at 1800. Steelhead were beginning to show, with Lower Granite passage numbers at 10. Adults: seeing 25-35 Spring Chinook per day at Bonneville with a total of 300 so far. Steelhead were in the range of 100-130 per day, totaling 3700 for the season so far. Lower Granite had 350, totaling 5000. Wagner noted that the season is still early and higher numbers are expected in April. Cindy LeFleur, WA, added that lower Columbia River gil net fishing opened yesterday, and catch estimates should be available in the coming weeks.

Power Tony Norris, BPA, had nothing to report.

Water Quality: Scott English, COE, had nothing to report. He did mention that all gauges and monitoring stations are running well except for Chief Joseph, which was expected to be running properly by 4/1.

The next TMT meeting will be: a face to face on **4/7 at 9:00 am at COE.**

Agenda items will include:

- Notes Review
- Updated Weather and Flood Control Forecasts
- Hanford Reach Update
- Dworshak Release Update
- 2010 Operations Update

- Spill Update
- Operations Review

Future TMT meetings:

4/14 face to face, time currently set for 9 am, but confirmation to come via email.

Agenda items will include

- Transport Update
- Updated Weather and Flood Control Forecasts
- Hanford Reach Update
- Dworshak Release Update
- 2010 Operations Update
- Spill Update

4/21 - conference call

4/28 - face to face- COE

5/5 - face to face- COE

5/12 - conference call

5/19 - face to face- COE

5/26 - conference call

**Columbia River Regional Forum
Technical Management Team Meeting
March 31, 2010**

1. Introduction

Today's TMT meeting was chaired by Karl Kanbergs (COE) and Doug Baus (COE) and facilitated by Erin Halton (DS Consulting) with representatives from COE, BPA, Oregon, Montana, BOR, USFWS, NOAA, CRITFC, Washington, Idaho and others present. The following is a summary (not a verbatim transcript) of the topics discussed and decisions made. 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 March 17 and 24

Paul Wagner (NOAA) said he had a few comments he would bring to the next TMT meeting April 7, when the March 17 and 24 minutes will be finalized.

3. Updated Weather and Flood Control Forecasts

Karl Kanbergs (COE) showed TMT two graphs linked to today's agenda that forecast the region's water supply. The first graphic shows current water and snow equivalents in the U.S. portion of the Columbia basin. Conditions have improved slightly since the last report to TMT, particularly in terms of snow accumulation in the Cascade range. However, much of the region still is predicted to have only 50-69% of average water supply. Climate predictions show above average precipitation during the first two weeks of April – but not enough to stage a dramatic turnaround. Water forecasts remain low throughout the Northwest despite recent rains.

The second link shows forecasts for both the U.S. and Canadian portions of the basin. Canada still has 75-90% of average snowpack, with conditions in the U.S. basin lagging behind that. The early bird forecast will come out tomorrow, but a major turnaround is not anticipated.

The ESP forecasts have started to level off, which indicates no further deterioration in the water supply. The ESP forecast released on March 30 was 1 million acre feet below the midmonth forecast, Tony Norris (BPA) noted.

NOAA recently updated its 30-90 day outlook, which is still grim, Kyle Dittmer (CRITFC) said. An updated ENSO forecast of conditions in the Pacific Ocean will be available when TMT meets again April 7.

4. Hanford Reach Update

Since Russell Langshaw (Grant PUD) last reported to TMT, there has been only one day (March 19) with a notable daily delta of 28.7 kcfs. The

constraint that day was 30 kcfs. Daily deltas have ranged from 0.7 to 28.7 kcfs per day, keeping the operation easily under its 20 kcfs or 30 kcfs daily constraints. Flows remain low everywhere, Langshaw said. The accumulation of temperature units at Vernita Bar is about 200 TU's before the end of emergence and 740 TU's before the end of spawning.

5. Dworshak Hatchery Release

Due to recent rains the mainstem Clearwater is rising, with flows predicted to peak tonight, David Wills (USFWS) reported. So Dworshak Hatchery staff would like to release all their fish by midnight tonight to take advantage of the high flows. The hatchery's request is for Dworshak outflows to increase to about 5 kcfs, as in previous years. What's different this year is that the hatchery is preparing to release all 2 million smolts in one night, from 6 pm to 12 pm, in recognition of the impact on scant water supplies. Wills estimated that the request will take about 1-1/4 inches of water from the top foot of the Dworshak reservoir elevation, or around 2 kaf of volume.

Yesterday FPAC discussed this operation, and support was unanimous among all those participating in the conference call, Wagner said. The COE will move forward with this operation as requested.

6. 2010 Operations

a. Bonneville Powerhouse 2 Corner Collector Operations. The COE has been trying to balance water quality standards and kelt passage in its operation of the B2CC, Baus reported. It has been challenging to keep dissolved gas levels under 110%. Recently NOAA requested the COE open the ice and trash sluiceway at powerhouse 1. This morning both the sluiceway and the B2CC were operating.

The B2CC will remain open until 7 am on April 10, when it will close for 10 hours to allow maintenance work on the behavior guidance system and the Bonneville 2nd powerhouse. Next year, it might be possible to automate B2CC operation, removing the challenge of opening and closing it thanks to a \$40 million FY11 item budgeted by SCT. Tomorrow the waiver to the 110% TDG state standard kicks in, making today the last day of B2CC coordination this year.

b. Low Flow and Spill Operations. According to the STP forecast released yesterday, Bonneville inflows will be 108.1 kcfs on April 10 when spill starts on the lower Columbia River, Baus said. This will be a challenging year, with flows poor and spill season fast approaching. When spill starts at 1 minute past midnight on April 3 on the Snake River, Ice Harbor Dam – like Bonneville – is expected to fall short of its flow objective, with probably 30-35 kcfs inflows for most of April instead of the required 45 kcfs.

Rick Kruger (Oregon) said a group of regional stakeholders is meeting tomorrow morning at 8 am to discuss the projected Bonneville spill amount. TMT

will hear a report on this at its next meeting April 7. Tony Norris (BPA) added that BPA will try to flatten as much as possible the flow rate across the day..

Yesterday FPOM reached agreement on how to operate spill over the surface weir at Lower Granite in this low-flow year, Russ Kiefer (Idaho) said. FPOM agreed on triggers for switching from the high to the low crest of the spillway weir, and on when it would shut down if summer flows get low. The changes will be implemented via a change order to the Fish Passage Plan, which has been sent to FPOM members. Doug Baus will post the change order to the COE's 2011 FPP website.

7. Total Dissolved Gas Reporting for 2010

Scott English and Laura Hamilton (COE) gave a presentation on 2010 TDG and temperature reporting of conditions on the mainstem Columbia and Snake rivers. The presentation began with the background of state water quality standards and exemptions during spill season. The TDG waiver process allows the COE to adjust its reporting standards during spill season.

However, due to the BiOp litigation, the Corps is operating to be consistent with operations under the court orders. Under the court-ordered rollover operations, the COE is implementing water quality standards that were in effect in 2006. Since then, Washington redefined a TDG exceedance as a rolling consecutive 12-hour average, and Oregon dropped the requirement to use forebay gages in spill management. Neither of these changes can be implemented while the court-ordered rollover operation continues.

From 2002-8, the RCC used 14 instances in its tracking and reporting of TDG management. In 2009 this was condensed into 3 basic exceedance types.

- Type 1 – These are now called conditions, not exceedances, because they are beyond RCC's control, such as involuntary spill caused by high flows.
- Type 1a – These are caused by planned or unplanned power equipment or generation outages.
- Type 2 – These exceedances are due to communication errors or inability to operate equipment as planned.
- Type 2a – These are caused by malfunction of a fixed TDG monitoring station.
- Type 3 – These exceedances occur despite the use of best professional judgment when conditions don't turn out as predicted.

8. Emergency Actions and Spill Priority Lists

The salmon managers have discussed both the emergency actions and spill priorities lists, Wagner reported. There are no recommended changes to

either list. The emergency actions list is posted to the TMT website as an appendix to the Water Management Plan.

The salmon managers anticipate there will be no involuntary spill this year. The spill priority list is included in the spring/summer update of the WMP, Norris said. Since the spring/summer update was posted, Priest Rapids Dam has been moved to the top of the mid-Columbia section of the initial spill priority list in response to a comment from Paul Wagner, Scott English (COE) said. The spill priority list comes into play when there's overgeneration spill, i.e. no choice but to spill somewhere.

9. Operations Review

a. Reservoirs. Grand Coulee is at elevation 1,278.15 feet, meeting Vernita Bar protection flows, John Roache (BOR) reported. Essentially all the headwater projects are well below their rule curves for flood control, Kanbergs said. A phone participant asked, can Grand Coulee reservoir be expected to achieve its April 30 flood control elevation of 1,283.3 feet, given the forecasted inflows? What about meeting the June 30 refill target? The reservoir probably won't reach its April 30 flood control elevation, Roache replied. However, total refill by around June 30 is likely despite the STP projected elevation of 1,264 feet on April 30. Grand Coulee elevations will depend heavily on Priest Rapids operations.

Hungry Horse is at elevation 3,520.55 feet, discharging 0.8 kcfs. Mainstem flows have been rising with about 1-1/2 inches of rain the past few days, so the reservoir is filling slightly for the first time in months. Libby is at 2,403.5 feet, essentially passing inflows of 3.5-4 kcfs to meet the 4 kcfs minimum discharge.

Albeni Falls is at elevation 2,051.8 feet, passing inflows of 13.5 kcfs. Tomorrow it will begin filling.

Dworshak is at 1,524.78 feet, and releases continue at 1.2 kcfs. Inflows rose from 3 kcfs on March 29 to 9.5 kcfs on March 30. As of the March 1 forecast, the COE estimated 50-60% probability of refill. Jeremy Giovando (COE) will look again at the probability of Dworshak refill in response to questions today. The COE will show TMT scenarios of probabilities given specific water volumes. Kanbergs added that a recent single-trace model showed Dworshak missing its refill target by 8 feet, which is similar to 2001 conditions.

Lower Granite releases averaged 35.4 kcfs yesterday, a slight increase. McNary releases yesterday averaged 96 kcfs, and Priest Rapids releases have been holding steady. Bonneville discharges averaged 143.9 kcfs yesterday, a 20 kcfs increase from the previous day thanks to the recent rain.

b. Fish. Juveniles: Passage data from the FPC website show a peak of 2,500 yearling Chinook at the White Bird trap on the Salmon River, probably hatchery releases. Since then, the numbers have fallen dramatically to 533,

Wagner reported. At the Imnaha trap, the yearling Chinook count was 551 fish. Passage counts at Lower Granite were zero, the lowest seen for this time of year, but recently increased to 10 fish per day. Subyearling passage at Bonneville recently increased from 500-600 fish per day to 1,800 fish per day. Steelhead yearling passage is following a similar pattern to that of yearling Chinook, with only a few fish showing up at Lower Granite now, a trend that's soon to change.

Adults: Adult spring Chinook are passing Bonneville at the rate of 25-35 per day, with a cumulative total of 300 fish for the season. Steelhead have been passing Bonneville at the rate of 100-130 per day, with a cumulative total of 3,700 fish for the season. Steelhead passage at Lower Granite is about 350 fish per day, with a cumulative total of 5,000. It's still early in the season, Wagner said, so these low numbers are not surprising. Compared to last year, we shouldn't expect much action until mid-April.

The gillnet fishery opened today, Cindy LeFleur (Washington) reported. She will give an update on the fishery at the next TMT meeting April 7. She estimated a catch of around 2,500-5,000 Chinook, mostly upriver fish that have been delaying their passage over Bonneville Dam.

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

d. Water Quality. All TDG monitoring stations are operating with the exception of Chief Joseph Dam, where the monitoring station was off as of March 26, English reported. The Chief Joseph TDG monitoring station is expected to go back into service today.

12. Next Meeting

The next TMT meeting will be April 7 at the COE division office. Topics covered will include the new water supply forecast, an update on the Bonneville spill discussion, the start of spill April 3 on the lower Snake, and the usual operations review. Subsequent TMT meetings were scheduled on April 14, 21 and 28, with placeholders for meetings or conference calls on May 5, 12 and 19. This summary prepared by technical writer Pat Vivian.

Name	Affiliation
Doug Baus	COE
Tony Norris	BPA
Rick Kruger	Oregon
Karl Kanbergs	COE
Jim Litchfield	Montana
John Roache	BOR
David Wills	USFWS
Paul Wagner	NOAA
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