

COLUMBIA RIVER REGIONAL FORUM

TECHNICAL MANAGEMENT TEAM

May 5, 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 April 21 & 28, 2010

Rick Kruger, OR, and Joel Fenolio, COE, both said they emailed edits to the April 4/28 facilitators summary in the Libby Operations section. David Wills, USFWS, clarified that in the Spring Creek Hatchery section of the facilitator's notes, 4.65 *million* fish were released. Paul Wagner, NOAA, asked the COE to clarify unclear language on page six of the 4/21 official meeting minutes, where it was stated that "Alternative 1 would result in a 97% decrease."

Action/Next Steps: DS Consulting will send the COE a revised version of the 4/28 summary and the COE will clarify language in the 4/21 official minutes and post updated versions of those sets of notes to the web. Both sets of the April 28th notes will be finalized at the next TMT face to face meeting, scheduled for May 26th.

Updated Weather and Flood Control Forecasts

Steve Barton, COE, reported to TMT that the River Forecasting Center's May early bird water supply forecast was released on 4/29. It showed that conditions basin-wide are down very slightly with the water supply being at 64% of normal at The Dalles (Jan-July), 73% at Grand Coulee (April- Sept). Snake River projects had increased slightly, with Lower Granite at 55% of normal (April- July.) The COE also reported that the unofficial (still being reviewed for quality control) water supply forecast for Libby was estimated at 4880 KAF, 57% of normal (April-July). (Directly following the TMT meeting, the official forecast became available and showed 4887'.) A "Tier 2" year was officially declared indicating an 800 KAF Sturgeon pulse and up to a 10 kcfs spill associated with that.

Action/Next Steps: This agenda item will be revisited as necessary.

Libby Operations

Steve Barton, COE, shared with TMT that after last week's official polling on Libby Phase II, Alternative I, he reached out to those sovereigns not in attendance for their thoughts/ positions on the matter. He reported that all parties that responded had no objection to, or were in support of the "Alternative 1" operations. Barton said several members echoed Montana's call to revisit the operation on an ongoing basis to re-evaluate the final June target.

Barton then directed TMT to two graphs (posted in one link to the agenda) that tracks the storage accounting based on actual volume and flows over the past week. Joel Fenolio, COE, walked TMT through this modeling data, noting that 88 KAF had been stored thus far and adding that the storage is expected to reach 260 KAF by 5/16. The group asked clarifying questions regarding KAF numbers and VarQ flows. Barton also noted that any forthcoming SORs for Sturgeon Pulse will effect operations as well.

Action/Next Steps: Fenolio will update the storage links each week by Tuesday am, so the Salmon Managers can review the latest data at their FPAC meetings. This agenda item will be revisited weekly.

Water Management Plan Spring/ Summer Update

Steve Barton, COE, reported back to TMT that comments from MT and BOR have been received, reviewed and posted by the COE. USFWS and NOAA said their comments would be sent over in the next day or two. Doug Baus, COE, noted that they'd like more comments and walked TMT through where a copy of the latest draft can be found and downloaded from the TMT site. Several Salmon Managers mentioned that they will submit their final edits over the next two days. The group discussed how best to date the document so that the most recent version can always be easily found. Baus will update the documents as suggested.

Action/Next Steps: Barton asked that suggested changes be submitted to Doug Baus, COE, in track changes. The drop dead date for submissions is this Friday 5/7 by C.O.B. After taking the following week to review and incorporate all comments, the COE will publish the final plan by 5/15. Barton offered that folks may contact him should they have any issues meeting the above deadlines.

Priest Rapids Flow Objectives

Tom Lorz, CRITFC, reported that FPAC discussed the objective and their recommendation was to shift next week's average flow target to 135 kcfs. BPA and the COE both responded that they can meet the request, and John Roache, BOR, said that based on the latest STP, the Action Agencies can operate the project at 135 kcfs and still meet draft rate criteria at Grand Coulee. Paul Wagner, NOAA, said that the 135 kcfs operation should work well for where the fish are at this stage in their migration. Wagner said he noticed the pools at Vernita Bar were drafted to their bottom on 5/2; Tony Norris, BOA, clarified that is typical for the end of the week, with refill on Mondays.

Action/Next Steps: Priest Rapids flows will be increased next week, with a weekly average target of 135 kcfs. Wagner will update TMT on these operations at the next TMT meeting on 5/12.

Operations Review

Reservoirs: Grand Coulee was at elevation 1269' and meeting Priest Rapids objectives of 110 kcfs. Hungry Horse was at 3530.13', with 4 kcfs outflows and filling slightly. Libby was at 2408.35' with inflows of 11 and outflows of 4 kcfs. Albeni Falls was at 2055.95' with inflows of 23.5 kcfs, and outflows of 19.4 kcfs. Dworshak was at elevation 1553.86' with inflows of 14.5 kcfs and outflows of 1.2 kcfs. Steve Hall, COE, noted that the current water supply forecast released 5/1 shows a 68% probability of Dworshak meeting refill. Hall cautioned that the forecast is calling for little precipitation and so the situation could change quickly. Priest Rapids had 115.5 kcfs outflows, Lower Granite had

61.5 kcfs outflows and McNary had 180 kcfs outflows. TMT members discussed the merits of reporting in and outflow data and what the best way is to present the data. Jim Litchfield, OR, and Rick Kruger, OR, noted that updates at TMT should be consistent with what the current requirements the BiOp - unless otherwise requested.

Fish: Paul Wagner, NOAA, reported on adult passage: adult passage at Bonneville was in the 9,000 per day range this week, with 135,000 Spring Chinook at Bonneville for the year, above the ten year average. Regarding smolt data, Wagner directed TMT to the two week passage index on the Fish Passage Center Site. Lower Granite tracking historically well, 143,000-58,000 (66,000 yesterday). Transportation collection began at Little Goose and was scheduled to begin on 5/5 at Lower Monumental. Sampling data revealed 130,000-60,000 and 5,000 (low) respectively at the two projects. Yearling Chinook are tracking 96,000 at McNary, 31,000 at John Day and 5,000 at Bonneville. Steelhead have been light at 77,000-48,000 (averaging 55,000). After transportation at Little Goose, numbers dropped quickly from 153,000 to 25,000. Lower Monumental had 15,000. Mid Columbia projects were inline with historical expectations; 36,000 at McNary, 20,000 at John Day, 24,000 at Bonneville. McNary had 18,000 Sockeye- also inline with the historical expectations. TMT looked at smolt passage data (Wagner noted most fish are from the hatchery releases): Lower Granite Yearling Chinook are within the range of expectations and Steelhead are lagging behind the 10 year average. Wagner then directed TMT to DART data; Steelhead smolts are passage tracking close to the 10 year average at Rock Island, McNary, John Day and Bonneville.

Power: Tony Norris, BPA, referred TMT to the wind generation data, noting that the last week was a very active period, with generation staying high for 7-8 days.

Water Quality: Scott English, COE, shared with TMT that the April Water Quality Report for the Lower Columbia and Snake Rivers has been posted to the TMT web page. 16 TDG instances were reported for the month, of which most were Type 3 instances at the Camas/ Washougal gauge (most likely attributed to temperature changes of 1.5 degrees.) He reported that all TDG stations are currently working properly.

The next TMT meeting will be: conference call on 5/12 at 9:00 am.

Agenda items will include:

- Hanford Reach Update
- Libby Operations Update
- Priest Rapids Update
- Water Management Plan Comments Update

Future TMT meeting schedule:

5/19 - conference call

5/26 - face to face- location TBD.

Columbia River Regional Forum
TECHNICAL MANAGEMENT TEAM OFFICIAL MINUTES

May 5, 2010

Notes: Pat Vivian

1. Introduction

Today's TMT meeting was chaired by Steve Barton (COE) and facilitated by Erin Halton (DS Consulting). Representatives of the COE, NOAA, Oregon, BPA, Montana, USFWS, Washington, Idaho, BOR, CRITFC and others attended. This summary is an official record of the proceedings, not a verbatim transcript. Anyone with questions or comments about this summary should provide them to the TMT chair or bring them to the next meeting.

2. Review Meeting Minutes for April 21 and 28

There were changes to the April 21 official minutes and to the April 28 facilitator's notes; these will be revised and re-posted to the TMT web page. TMT will review the April 28 official minutes at the next TMT meeting. Changes are:

April 21 official minutes:

- Libby operations, page 6, last paragraph: Paul Wagner (NOAA) pointed out the minutes currently say, "...the Kootenai Lake data shows a 97% decrease in flows released from Kootenai Lake under Alternative 1 and a 96% decrease under Alternative 2." Steve Barton (COE) will provide amended language.

April 28 facilitator's notes:

- Libby operations, bottom of page 2: Doug Baus (COE) reported that Joel Fenolio (COE) requested language be added to clarify that the COE is committed to releasing the additional 260 kaf of stored volume by June 30. The COE will revise the notes accordingly.
- Spring Creek Hatchery update, page 5: Dave Wills (USFWS) will provide amended language for, "...the May release from the Spring Creek Hatchery is scheduled for 5/10 with 4.65 fish planned for release."

3. Updated Weather and Flood Control Forecasts

The RFC early bird May water supply forecast was issued April 29, Barton reported. All forecasts are down except in the Snake River. The volume forecasts are as follows:

- The Dalles, January-July – 64% of average, or 68.6 maf. April-August – also 64% of average, or 59.7 maf, a 200 kaf decrease from the previous forecast.
- Grand Coulee, April-September – 73% of average, or 46.6 maf, a 500 kaf decrease from the previous forecast.
- Lower Granite, April-July – 55% of average, or 11.9 maf, a 200 kaf decrease from the previous forecast.

The COE official water supply forecast for Dworshak is up slightly, with a 1,526 kaf forecast, or 57% of average. The COE official forecast for Libby, released at the end of today's meeting, is 4,887 kaf with a forebay elevation that's 3.5-4 feet higher than it would have been without the Phase 1 alternative operation. This makes 2010 a Tier 2 year with an 800 kaf sturgeon pulse at Libby (see item 5 below for further discussion of Libby operations).

4. Hanford Reach Update

This item was postponed until the May 12 conference call.

5. Libby Operations

After polling all sovereigns regarding Libby operations this year, the COE found either no objection or support for Alternative 1 under Phase 2 – as long as the Libby elevation target for the end of June is closely monitored. The COE concurs with Montana's request to keep Libby operations on the TMT agenda throughout spring and summer. Several parties have expressed concern about a potential steep drop-off in June once the sturgeon volume is exhausted. The situation will become clearer when the sturgeon SOR is available. The COE wants to remain flexible and to avoid steep drop-offs in Libby outflows. Montana expressed appreciation for this approach.

To provide an update on Libby, Joel Fenolio (COE Seattle) walked TMT through two graphs attached to this item on today's agenda. Based on STP single-trace inflow projections, the bottom graph shows actual Libby operations to date and the likely operation throughout summer. An estimated 88 kaf would have been stored in Libby reservoir to date if the COE had not proposed and TMT approved Phase 1 of the alternative operation. If the Phase 2 deviation request is likewise supported via TMT consensus, the COE expects a total of 260 kaf will be stored in Libby by May 16. The 260 kaf would then be released around the sturgeon pulse.

The current VARQ discharge is 14.5 kcfs, Fenolio reported. The COE is now accounting for the volume difference between inflows and 4 kcfs minimum flows. Volume stored up to this point will be shaped with Phase 1 outflows. Phase 1 storage will be rolled into Phase 2.

The graph attached to today's agenda shows actual inflows to date and projected inflow volumes under the VARQ operation vs. the deviation request for Phase 2. It also shows actual and projected elevations under the VARQ operation vs. the deviation request. Fenolio will update this graph by 9 am Tuesdays so the Salmon Managers will have the latest information on Libby available for FPAC meetings, and TMT members will have time to review the information before meeting on Wednesday. Fenolio said he'll use colored graphics to sharpen the distinction between actual and projected inflows.

For the rest of the 2010 passage season, the COE will post updated water supply forecasts for Libby to the TMT page and email them directly to TMT members. The May final inflow forecast for Libby, released just as TMT disbanded today, is 4,887 kaf. TMT will revisit Libby operations on May 12 and weekly thereafter.

6. *Water Management Plan – Spring/Summer Update*

The COE has received comments from Montana on the spring/summer update, which are posted to the TMT page under the Water Management Plan link. Comments from the BOR have been integrated into the update as well. Doug Baus (COE) solicited more comments from TMT members. The final deadline is May 7, driven by the BiOp deadline of May 14 for posting the final spring/summer update.

TMT briefly discussed how to list the dates for ongoing drafts of "living" documents such as the WMP spring/summer update that are posted to the web for comments. There was general agreement to use the TMT minutes as an official record that BiOp deadlines were met, and to use the WMP postings as a way for TMT members to make sure they're commenting on the current version of the document. In future, the date listed to the right of the comment link will be the date on the title of the document that was reviewed.

Tony Norris (BPA) volunteered to reorganize the TMT web page this fall so it's more interactive. He'll present it for TMT review sometime in September.

7. *Priest Rapids Flow Objectives*

The flow objective for Priest Rapids is 135 kcfs this week, Tom Lorz (CRITFC) reported. The Action Agencies agreed to support that flow target. Tony Norris said TMT needs to revisit this issue weekly throughout spring and summer. This year we're managing drops of water, trying to make the system perform the best it can for fish. The COE will implement the 135 kcfs flow target. There is some concern about the draft rates at Grand Coulee associated with 135 kcfs releases when inflows are down. The latest STP model run shows that Grand Coulee can probably still meet the draft rate criteria while meeting the 135 kcfs objective at Priest Rapids. John Roache said the BOR will begin releasing flows from Grand Coulee to meet 135 kcfs at Priest Rapids on May 10. By May

16, the reservoir is expected to be at elevation 1,260 feet based on STP traces released May 4. No drastic increases in inflows are expected over the next week. Paul Wagner (NOAA) said 135 kcfs flows at Priest Rapids would mesh well with the needs of mid Columbia fish. Snake River spring Chinook are migrating on schedule, while steelhead migration is lagging.

Discussion turned to stranding that occurred at Vernita Bar this past weekend. The situation was handled better this year than last, Wagner said. The problem is that mid Columbia pools draft to empty Sunday night, and outflows might dwindle until inflows pick up on Monday. This makes it difficult to guarantee the full volume at Priest Rapids. Grant PUD has managed the operation well within the terms of the agreement, Wagner said. TMT will revisit the Priest Rapids flow objective in its conference call May 12.

8. Operations Review

a. Reservoirs. Grand Coulee is at elevation 1,269 feet, meeting the 110 kcfs (weekly average) at Priest Rapids. Hungry Horse is at elevation 3,530.13 feet. It was discharging 3 kcfs last week but releases increased to 4 kcfs this morning based on the latest water supply forecast. Inflows are around 5 kcfs.

Libby is at elevation 2,408.35 feet, with inflows of 11 kcfs and outflows of 4 kcfs. Albeni Falls is at elevation 2,055.95 feet, with inflows of 23.5 kcfs and releases of 19.4 kcfs.

Dworshak is at elevation 1,553.86 feet, about 45 feet from full, with inflows of 14.5 kcfs and outflows of 1.2 kcfs. Based on the May 1 principle components forecast there is a 52% chance of refill and based on the linear regression forecast, Steve Hall estimated a 73% chance that Dworshak reservoir will refill in 2010. Of the 10 years with the closest volumes to this year, five achieved refill and five did not. The worst year on record was 1987, with a maximum Dworshak elevation of 1,587 feet, 13 feet from full. The recent precipitation since the forecast indicate the reservoir now has about a 68% chance of refilling compared to only 52% last week. Inflow increases over the past few days that raised these odds are not likely to continue next week. This time of year is very volatile, with frequent spikes in inflows.

In the mid Columbia, Lower Granite inflows are 61.5 kcfs, having spiked at 70 kcfs. Lower Granite inflows haven't dipped below 50 kcfs since late April. Yesterday Priest Rapids discharged 115.5 kcfs, exceeding the 110 kcfs objective which will soon increase to 135 kcfs. For the week ending May 7, Priest Rapids released 107 kcfs. For the week ending April 25, flows were 98.8 kcfs, exceeding the 90 kcfs objective. McNary inflows are 180 kcfs.

There was discussion of whether it's more important to focus on inflows or outflows in the mid Columbia. Barton said he'll switch the reporting protocol to whatever format best serves TMT's information needs. He pointed out that inflow data give an idea of the resources TMT has to work with. Jim Litchfield

(Montana) favored listing all mid Columbia data in terms of outflows because outflows relate directly to BiOp flow targets for spring and summer. Rick Kruger (Oregon) agreed the reporting format should be consistent with the BiOp's focus. Tony Norris suggested tracking the current weekly averages and seasonal averages to date, in relation to BiOp objectives. Barton will update the reservoir summary plots attached to this agenda item for the next TMT meeting.

b. Fish. Adults: Approximately 7,000 spring Chinook per day have been passing Bonneville this past week with a peak count of 9,000 on May 4, Wagner reported. The yearly count so far is 163,000, which exceeds the 10 year average. Typically spring Chinook migration declines at this time of year, and that's what appears to be happening now. However, the forecast suggests there might be a spectacular return in 2010.

Juveniles: Daily smolt reports on the FPC site indicate the passage at Lower Granite has been tracking well in line with expectations for this date. Counts for the past week ranged from 143,000-58,000 smolts per day, with a count of 66,000 yesterday. Daily transport is underway at Little Goose, with a passage index of 150,000-60,000 fish per day. Transportation began today at Lower Monumental, with 5,000 fish per day, which is low. McNary passage has been tracking closely with historic expectations in terms of passage timing. Passage counts for yearling Chinook are 96,000 at McNary, 31,000 at John Day, and 85,000 at Bonneville.

Juvenile steelhead passage at Lower Granite has been low for the past week at 77,000-48,000 per day. When transportation started at Little Goose, the count rose to 133,000 fish per day, which suggests that fish had been residing in the pool. The count dropped to 25,000 the next day. Current juvenile steelhead counts are 15,000 per day at Lower Monumental, 36,000 at McNary, 20,000 at John Day, and 24,000 at Bonneville. All of these counts are in line with expectations.

Juvenile sockeye passage at McNary has been 18,000 fish per day for the past few days, which is in line with expectations. The FPC smolt website has graphs of cumulative passage data, which Wagner showed to TMT. Lower Granite yearling Chinook passage is within the range of expectations for this time of year. The FPC site confirms that steelhead passage at Lower Granite is lagging. Both Lower Granite and Little Goose had low early steelhead passage counts this year. Passage at Little Goose is in line with expectations. Yearling Chinook passage at Rock Island is following the 10 year average closely. Passage counts at McNary, John Day and Bonneville are all around the 10 year average. All of these index counts are heavily influenced by hatchery releases. Sockeye passage at all the mid Columbia dams is looking very good.

c. Power System. Sustained winds resulted in a week or more of uninterrupted wind energy production, Norris said. Generation was around 2,700 mW, with a capacity of 2,780 mW in BPA's balancing authority area. Wind energy displaces the highest cost resource, starting with gas, then coal, nuclear

and hydro, Litchfield said. Some 80% of the wind generation in BPA's BAA serves loads outside the Northwest. Integrating it into the BPA system is a challenge. The wind energy graph on BPA's web site is updated every 5 minutes.

d. Water Quality. Scott English (COE) showed TMT the updated TDG summary for April. There were a total of 16 TDG exceedances, most at Camas Washougal gage. All were type 3, meaning the exceedance occurred despite best professional judgment. These are attributed to temperature spikes.

11. Next Meeting

The next two TMT meetings will be conference calls May 12 and 19, followed by a meeting in person May 26, possibly at Bonneville Dam or somewhere in Hood River. Agenda items for the May 12 call will include a Hanford reach update, a Libby operations update, Priest Rapids flows objectives, and comments on the WMP spring/summer update.

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