

# COLUMBIA RIVER REGIONAL FORUM TECHNICAL MANAGEMENT TEAM

July 28, 2010

## FACILITATOR'S SUMMARY NOTES

Facilitator: Erin Halton

Notes: 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.

### **Official Minutes/Facilitators' Notes**

Paul Wagner, NOAA, offered to email edits to the notes following today's meeting. When those changes are shared, the notes from meetings 7/14, 7/16 and 7/21 will be finalized.

**Action/Next Steps:** DS Consulting will email the revised notes after changes are received from Paul. They will also be posted to the TMT web page.

### **Upper Snake Flow Augmentation**

John Roache, Reclamation, shared a summary of summer flow augmentation out of the Upper Snake River. He reported that May flows came from the powerhead pool because of the very low flow forecasts at that point. With the improved conditions in water supply in June, the total release will be 487 KAF – using a combination of Reclamation space, natural flows and rental pool water (from water users). John shared a chart showing the guaranteed rental pool water that is available from the Upper Snake in any given year based on carry-over storage and forecasted water supply, and another chart depicting flow augmentation water that came past Milner in 2010. He noted that the remaining flow augmentation releases are coming solely from the Payette.

In response to a question about the opportunity to provide spring releases, John shared that this is ‘complicated’ by the uncertainty of actual volumes that will be available later in the season. In response to a question about the “latitude for shaping”, he clarified that Reclamation knew in early May that power head could be used to provide augmentation for spring migration. Paul Wagner, NOAA, commented that the releases in May were indeed a good move on Reclamation's part. John said Reclamation is confident that the full volume of flow augmentation released from Reclamation reservoirs will pass through Brownlee, even though it is within Idaho Power's, not Reclamation's, authority to release it. TMT members thanked John for providing the detailed summary.

### **Libby Accounting**

Steve Barton and Joel Fenolio, COE, shared a power point summary of the Phase II Storage and Sturgeon Volume operations. Joel reminded everyone that the sturgeon volume is calculated as any flow greater than 4 kcfs in the VARQ baseline, beginning on 6/8. A graph showed what the straight VARQ operation would have looked like, had no deviation request been submitted for this year, then compared that to the actual operation,

noting that only the flows requested in the SOR were accounted against the sturgeon volume. Phase II accounting, he said, is the difference in volume between the baseline and actual volume released or in storage, and that the COE's required goal is to remain volume neutral to the Columbia mainstem. Finally, Joel shared the summary of the full evacuation of Phase II storage – in parts 1, 2, 3 and 4 from June through mid-July. TMT members thanked the COE for providing this useful summary.

**Action/Next Steps:** The COE is developing new forecasting tools to inform VARQ and other operations, and will likely present information during the TMT Year End Review.

### **Dworshak Operations**

Steve Barton and Steve Hall, COE, reported on current Dworshak operations and next step operating options for temperature and water management. The current temperatures at Lower Granite were ranging 65-66° F. Walla Walla District ran the water temperature model to show two options; maintaining current flows of 14 kcfs, or dropping down to 12 kcfs starting today. The model showed a very slight temperature change (a quarter of a degree increase) between the two operating scenarios. Weather forecasts show cooler temperatures are likely to remain in the system for awhile longer. Hall suggested that the COE did not have concerns at this point with either option, however lower flows now will help provide adequate temperature management through August. Barton also said that the COE, with the help of the region, will continue to need to make decisions about how to shape the water releases to allow the project to get down to elevation 1535' by the end of August. (The current elevation was 1578.8'.) Current models showed that the COE could meet this elevation target by operating the project at 11 kcfs through the end of August.

Russ Kiefer, Idaho, reported that discussions yesterday at FPAC, with limited participation, resulted in a recommendation to operate the project at the current flows (13.5/14 kcfs) through this Friday, 7/30, then lower to 11 kcfs and maintain until further discussion next week. He acknowledged that this recommendation was not far from the COE's modeled proposal to operate Dworshak at 12 kcfs from 7/28 to 8/4, which showed temperatures rising toward the 68° threshold around August 1 and then dropping back down. Steve Hall added that the model was conservative, so the actual rise in water temperatures may not be as dramatic as what was depicted. Everyone noted that recent cooling in the area was a departure from what had been forecasted, and had helped moderate water temperatures and provided some operating flexibility.

After further discussion, TMT members present at the meeting agreed to the proposed operation of 12 kcfs outflows starting today and maintaining until further TMT discussion next week.

**Action/Next Steps:** The COE will operate Dworshak at 12 kcfs starting at midnight 7/28 and maintain until further discussion at the 8/4 TMT conference call.

### **Ice Harbor Pool Gauge Issues**

Steve Hall, COE, reported that a survey crew will be surveying the gage elevations today and tomorrow at the Lower Monumental tailwater, to determine whether the project is providing adequate depth at the navigation lock for safe barge passage. It was anticipated that the results will be known as early as Friday afternoon, and the COE will share updates with TMT via email as soon as possible. The COE is currently operating the project with flexibility for an extra ½ foot range out of MOP, and plans to return to normal MOP operations as soon as it can be confirmed that MOP operations will provide safe navigation conditions.

### **Summer Treaty Fishing**

Kyle Dittmer, CRITFC, reported that a final SOR was submitted for summer treaty fishing, for the timeframe 7/27-7/29. Steve Barton, COE, responded that the COE is implementing the request as written. Final catch counts will be shared at a future TMT meeting.

### **Operations Review**

**Reservoirs:** John Roache, Reclamation, and Steve Barton, COE, reported on their agencies' respective reservoirs. Grand Coulee was at elevation 1287.4' and managing for McNary flows, targeting an August 31 elevation of 1277.3'. Hungry Horse was at elevation 3557.04', with 4.3 kcfs outflows and targeting elevation 3540' by September 30. Libby was at elevation 2441.13', with 12.6 inflows and 7 kcfs outflows. Albeni Falls was operating 18.6 kcfs inflows and 15.8 kcfs outflows, maintaining the summer elevation range of 2062-2062.5'. Dworshak was at elevation 1578.8', with 1.5 kcfs in and 13.3 kcfs out. Lower Granite daily average outflows were 39.9 kcfs; 100.6 kcfs at Priest Rapids; and 149.7 kcfs at McNary (the weekly average at McNary last week was 161.2 kcfs).

The COE provided a chart of the Little Goose pool and Lower Granite navigation lock tailwater elevations to show some reverse slope issues; they clarified that the issues were not enough to cause navigation concerns that would require an operation outside MOP. As this was an issue in the past, the COE is monitoring it closely and will keep TMT informed if problems arise. The COE added that the system is approaching the lower flow criteria to trigger closing the RSW at Little Goose, and this operating change might occur later next week. TMT will check in on this issue during the 8/4 TMT call. Finally, the COE is monitoring warming at McNary to look for fish mortality concerns, and at this point, no issues have arisen.

**Fish:** Paul Wagner, NOAA, reported on adult passage, noting that sockeye counts at Bonneville were less than 100/day, with 1,966 counted at Lower Granite. Summer chinook adult totals were 96,000, with counts at 500/day at Bonneville. These numbers were similar to the 10 year average and higher than last year's counts. Steelhead numbers were on par with record numbers seen in 2001. Subyearling counts at Lower Granite were 2,000/day and 5,000/day at Lower Monumental – way above the 10-year average.

**Water quality:** Scott English, COE, reported that all water quality monitoring gauges were operational, and noted that TDG exceedances at the Bonneville and the Camas gauge were being assessed, and were expected to wane since the spill test at Bonneville

had concluded. Scott shared the June TDG report which showed that most exceedances were due to involuntary spill.

**Next Meeting: August 4 Conference Call**

Agenda items include:

- Dworshak Operations
- Little Goose Spillway Weir
- Ice Harbor Pool Gauge Issues

**Columbia River Regional Forum**  
**TECHNICAL MANAGEMENT TEAM OFFICIAL MINUTES**

**July 28, 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 Montana, Oregon, USFWS, COE, NOAA, BOR, BPA 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 give them to the TMT chair or bring them to the next meeting.

***2. Review Meeting Minutes for July 14, 16 and 21, 2010***

Paul Wagner (NOAA) said he would provide comments on these meeting minutes at a later date. TMT will follow up on this at its next meeting or via email.

***3. Upper Snake River Flow Augmentation***

John Roache (BOR) summarized the 2010 Snake River flow augmentation operation to date. Spring started with a dry forecast of 50-60% of normal water supply in the upper Snake Basin and it looked like providing 427 kaf of augmentation flows under the Nez Perce agreement would be difficult.

Reclamation initiated spring flow augmentation in May, an active time for fish, and had to use powerhead (the volume required to keep appropriate head on the turbines) to provide the releases. Use of powerhead limits augmentation flows to 427 kaf under the Nez Perce agreement. Since powerhead space is the last of the last to fill, dry conditions the following year could severely impact Reclamation's ability to even meet 427 kaf of flow augmentation if the powerhead space does not refill. Therefore powerhead is used only as a last resort.

Attachment 3a to this agenda item shows 2010 flow augmentation amounts by irrigation area. The upper Snake above Milner provided 157,344 acre feet of powerhead space as of May 31, 2010. The target flow augmentation volume was 427 kaf, and the total release into Brownlee Dam averaged around 4 kcfs/day through May. June brought unexpected rain which filled the reservoirs more than was expected. The availability of a willing seller allowed Reclamation to rent enough water to cover the powerhead space that was used thus allowing an increase of 2010 augmentation flow volume to 487 kaf. . As of July 16 all flow augmentation from the Upper Snake above Milner and the Boise had been released. All remaining flow augmentation from the Upper Snake is from the Payette system and will average Approximately 1-1.2 kcfs/day until about August 22..This year is the second, maybe the third or fourth year the BOR has been

able to provide 487 kaf of flow augmentation. (Follow-up note: 487 kaf of flow augmentation was also provided in 2006, 2008, and 2009).

Attachment 3b shows stipulated rental volumes from Water District 1 based on November 1 carryover storage and the April 1 water supply forecast. For 2010, carryover storage was about 2,357 kaf and the April 1 forecast was 2260 kaf so the rental volume guaranteed to be available this year was zero. Attachment 3c shows how flow augmentation was released from the Snake River above Milner..

Paul Wagner (NOAA) commented that release of water during May was a good decision this year. In terms of Idaho Power projects, the BOR guarantees releases from reservoirs in Idaho, but there's no guarantee of these volumes passing through Brownlee reservoir. However Reclamation is confident that the May flow augmentation releases did pass Brownlee Reservoir based on when the reservoir filled which has been typically in early June the past several years...

#### **4. Summary of Libby Storage Accounting**

Joel Fenolio (COE Seattle) gave a presentation on Libby storage accounting for the sturgeon volume and phase 2 storage under the deviation request.

The COE accounted for sturgeon volume as any flows above the VARQ baseline (how Libby would have operated without the deviation request) of 4 kcfs. Starting on June 8, the VARQ baseline began the sturgeon pulse. The Libby operation ramped quickly up to 26 kcfs, assumed powerhouse capacity at the time. Spill occurred June 10-17 but was limited by TDG concerns, and there were 2 days spill was limited due to head in the forebay. After the sturgeon spawning operation peaked, the project began ramping down to 7 kcfs bull trout minimum flows by June 30 as stipulated in the sturgeon SOR.

The first graph in attachment 4a shows a theoretical VARQ baseline operation without the deviation request. April 27 was the initial controlled flow date, which would have established the start of refill as April 17. Under this scenario Libby would have passed inflows from April 27 to mid May when inflow increased above the 14.5 kcfs VARQ flow for May. When the June forecast was released, flows would have ramped down to the VARQ rate of 13.6 kcfs until the start of the sturgeon pulse would have begun.

Jim Litchfield (Montana) asked whether the water supply forecast for 2010 might be high and triggered the 800 KAF for the sturgeon operation. There's still a month to go, Fenolio said, but the June water supply forecast of 4,400 kaf appears to be more accurate than the May forecast of 4,887 kaf. The May forecast was just above the cutoff point of 4,800 kaf, establishing 2010 as a Tier 2 year with a sturgeon pulse.

This topic warrants in-depth coverage at the TMT year end review, Litchfield commented. A better water supply forecast would have meant 800 kaf not released for the sturgeon pulse. The number of operational demands on Libby – VARQ, sturgeon flows, summer BiOp requirements, and refill targets – just don't add up. The COE recognizes this problem and will begin working next week on a more appropriate VARQ operation for Libby, Fenolio replied.

Phase 2 of Libby storage accounting involved the storage and release of the 260 kaf stored under the deviation request by a set date in order to assure flow neutrality. Initially that deadline was June 30, extended to July 15 by TMT. Beginning April 27, under phase 2 the COE released 4 kcfs from Libby instead of passing inflows. On May 15 the project ramped up to 6 kcfs releases. By May 21, 260 kaf had been stored in the reservoir, and the operation ramped up to 14.5 kcfs outflows. From April 27-May 21, the project stored an actual total of 260.6 kaf, with a reservoir elevation about 6 feet higher than it would have been under the VARQ operation.

Evacuation of the stored water took place incrementally. From June 1-9, the project released about 69.5 kaf at the rate of 17.7 kcfs per day above the VARQ flows of 14.5 kcfs and 13.6 kcfs. During spill operations the project released an additional 1.1 kaf, the spill was limited by TDG concerns. From June 17-30, the COE augmented the descending limb of the sturgeon pulse with 111.1 kaf of releases above the VARQ baseline. That left 79 kaf remaining in the reservoir, which was swapped with Grand Coulee storage and released from July 1-15. Release of the final 79 kaf of stored volume put Libby reservoir at elevation 2,438.4 feet on July 15 under either operation, making it flow neutral.

## ***5. Dworshak Operations and Temperature Modeling***

Attachment 5a shows existing conditions at Anatone, Orofino and other gauges on the Snake River, where temperatures have stayed in the range of 65-66 degrees F (at Lower Granite), Steve Hall (COE Walla Walla) reported.

Attachment 5b provides the comparison graphs TMT requested last week. One shows Dworshak outflows remaining at the present rate of 14 kcfs, the other shows outflows dropping to 12 kcfs today. The comparison indicates there would be little difference between the two operations, amounting to about 0.25 degrees F of cooling from the additional days of 14 kcfs.

Discussion turned to the best use of remaining augmentation volume for temperature control this summer. The current Dworshak reservoir elevation is 1,578.8 feet. The latest STP projection, assuming releases drop to 12 kcfs today, is for a seasonal average of around 11 kcfs outflows daily between now and the end of August in order to attain the target elevation of 1,535 feet by August 31. That means there is little flexibility in the shaping of Dworshak flows the rest of this summer.

Dave Wills (USFWS) asked for the elevation of the powerhouse intake when the units are in undershot mode. Elevation 1,395 feet, Hall said. Current Dworshak releases are around 45 degrees F, which is fine for the hatchery.

Attendance at yesterday's FPAC meeting was limited, with NOAA and USFWS representatives absent, Russ Kiefer (Idaho) reported. FPAC members present heard Fish Passage Center estimates showing that it would be possible to continue 14 kcfs outflows for about 9 more days. FPAC considered cutting back releases based on weather forecasts that change daily. Yesterday the Salmon Managers were going to advise the COE to maintain 13.5 or 14 kcfs outflows through July 30, then drop to 11 kcfs outflows on July 31. However, rain has increased and tributary temperatures have dropped overnight, so it might not be prudent to continue 14 kcfs outflows through Friday.

The model is showing a slight increase in temperatures over the next few days, peaking close to 67 degrees F but not above 68 degrees F, Hall reported. A River Forecast Center graphic based on radar imagery shows recent precipitation increases over LaGrande and Baker City in central Oregon, as well as 0.10 inch of rain through most of central Idaho and Montana.

In light of the precipitation increases, **NOAA** recommended dropping Dworshak outflows to 12 kcfs until next week. **Oregon, Idaho** and **USFWS** supported NOAA's recommendation and there were no objections from other TMT members. The **COE** will drop Dworshak outflows to 12 kcfs at midnight tonight and maintain that operation until TMT confers again August 4.

## ***6. Ice Harbor Pool Gauge Issues***

The COE has dispatched a survey crew to survey at the staff gages at Lower Monumental Dam to ensure that the tailrace gauges are providing adequate depth monitoring at the entrance to the navigation lock, Barton said. It appears that the temporary practice of operating Ice Harbor at up to half a foot above MOP is currently providing adequate depth for safe navigation.

The survey crew expects to finish work on July 30, Hall said. At that time the COE will assess whether it's possible to return to MOP operations and provide safe navigation. The elevation anomalies at Ice Harbor and Lower Monumental could be due to bad gauge readings caused by sideways eddies across the tailrace entrance during double testing. The COE is fairly certain that the radar gauge inside the stilling basin is functioning correctly. Barton added that the tailwater gauges are primarily situated for the purpose of establishing head for powerhouse operations, not necessarily monitoring tailrace conditions. There are hydraulic effects at the south end of the channel (the area of concern) when operations switch from full powerhouse to discharge during double testing, which began on July 26.

Attachment 6a summarizes discharges and elevations at Ice Harbor forebay and Lower Monumental tailrace. When the COE has confirmed whether

it's safe to return to MOP or operate a half foot above MOP, TMT members will hear about it via email. TMT will revisit Dworshak operations August 4.

## **7. Treaty Fishing**

Last week CRITFC submitted to the COE the final SOR of the summer treaty fishing season, Kyle Dittmer (CRITFC) reported. The SOR requests 1.5-foot operating bands at the three lower Columbia pools from 6 am, July 27, to 6 pm, July 29. The COE will implement the SOR as written. Fall treaty fishing will begin sometime in August, and CRITFC will provide summer treaty fishing catch totals to TMT when they are available.

## **8 Operations Review**

**Reservoirs.** Grand Coulee is at elevation 1,287.4 feet, releasing to manage flows at McNary. The August 31 target elevation at Grand Coulee is 1,277.3 feet. Hungry Horse is at elevation 3,557.04 feet, discharging 4.3 kcfs. Outflows may decline to 4 kcfs as the project moves toward its target elevation of 3,540 feet on September 30.

Libby is at elevation 2,441.3 feet, with inflows of 12.6 kcfs and bull trout minimum discharges of 7 kcfs. Albeni Falls is at elevation 2062.28 feet with inflows of 18.6 kcfs and discharges of 15.8 kcfs. Dworshak is at elevation 1,578.8 feet with inflows of 1.5 kcfs and discharges of 13.3 kcfs.

Snake River discharges yesterday were 39.3 kcfs and receding. Lower Granite daily average outflows were 41.8 kcfs last week. Priest Rapids daily average outflows were 109.6 kcfs last week compared to 100.6 kcfs now. McNary daily average outflows are 149.7 kcfs this week compared to last week's average of 161.2 kcfs.

The COE has produced a chart documenting prior years' concerns about minimum clearance concerns for safe navigation at Little Goose and Lower Granite (similar to the Ice Harbor/Lower Monumental navigation issue this year), Barton said. It appears that Little Goose and Lower Granite operations are currently providing adequate depth for safe navigation. The COE will continue to monitor this situation closely as flows decline. With flows dropping, closure of the Little Goose spillway weir will be triggered possibly by late next week. TMT will discuss Little Goose operations in its August 4 conference call.

Recent concerns about high forebay temperatures at McNary have not materialized, Don Faulkner (COE) reported. The current mortality rate of juveniles is 1-2% which is considered very low.

**Fish. Adults:** Sockeye migration is almost done, down to less than 100 fish per day at Bonneville with a seasonal total of 386,209 fish to date, Wagner reported. Sockeye passage is still going strong at Lower Granite with almost 2,000 fish passing per day. Summer Chinook are passing Bonneville at a rate of

500 fish per day with a seasonal total of 96,000. Steelhead are passing at the rate of about 6,000 per day (2,500 of them wild), with a seasonal total of 168,000. Summer Chinook passage this year is close to the 10-year average and better than last year.

Juveniles: Subyearling passage at Lower Granite, Little Goose and Lower Monumental is close to 2,000 fish per day at each dam. Chinook have had a good year, with subyearling passage at Lower Granite and Little Goose way above the 10-year average and still going strong. Wagner cautioned that PIT tag results show higher returns for the past 3 years due to the presence of more PIT tagged fish, which skews the comparisons. Nevertheless, smolt passage this year is remarkable in relation to 10-year averages – and it’s still going strong.

**Power.** There was nothing new to report today.

**Water Quality.** All TDG gauges are operational, Scott English (COE) reported. The COE and USGS are working together to assess TDG exceedances in the Bonneville tailrace and at Camas Washougal gauge. Now that the Bonneville spill test is finished, the COE has lowered the spill cap.

## **9. Next Meeting**

The next TMT meeting will be a conference call on August 4, with Dworshak operations, a Little Goose spillway weir update, and Ice Harbor/Lower Monumental operations on the agenda. That will be followed by a TMT meeting in person August 11.

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Dave Wills	USFWS
Steve Barton	COE
Paul Wagner	NOAA
John Roache	BOR
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