

COLUMBIA RIVER REGIONAL FORUM

TECHNICAL MANAGEMENT TEAM

July 11, 2007 Meeting AND update from July 13 Conference Call

FACILITATOR'S SUMMARY NOTES ON FUTURE ACTIONS

Facilitator: Robin Harkless

Notes: Erin Halton

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 Facilitator Notes / Meeting Minutes

June 27th TMT facilitator notes had one clarifying edit to the Treaty Fishing section and were finalized. No changes were made to the facilitator notes or official meeting minutes from the July 5th and 9th conference calls.

Action: The facilitation team will send the COE a final version of the 6/27 facilitator notes for posting as soon as possible.

Priest Rapids Update

Russell Langshaw, Grant County PUD, reported on a summary of 2007 Priest Rapids operations. A graph linked to the TMT agenda showed 4 total exceedances, a mean discharge of 171.7 kcfs and a mean daily delta of 38.2 kcfs. TMT members commended the good job done on Priest Rapids Operations this year.

Action/Next Steps: Langshaw said a formal 2007 Priest Rapids operations report will be completed in September and Priest Rapids will be on the agenda for the TMT year end review in November.

Updated Flow Forecasts

Cathy Hlebechuk, COE, referred TMT to several flow forecasts posted to the TMT web page, updated as of 7/10. The Dworshak ESP hydrograph showed inflows ranging between 1-1.5 kcfs and Hlebechuk noted that actual flows were down from the 1.85 kcfs forecasted by the River Forecast Center and the COE. Dworshak whiskers plot showed minimal variation in the minimum/maximum flow range. Libby ESP hydrographs showed flows gradually declining through August. Pat McGrane, BOR, said that Hungry Horse elevation was about two feet from full, drafting slightly with outflows at 4.4 kcfs.

Dworshak Operations

Cathy Hlebechuk, COE, reported that Dworshak continued to release 12 kcfs. Tina Lundell, COE, reported that Dworshak temperatures were holding at 43.5° and that the forebay elevation was at 1590.25'. Lundell added that Lower Granite tailwater temperatures were 67° and that air temperatures in the area were expected to be in the range of 101-103° for the next couple of days and then drop to 95° by 7/15. Mike Schneider, COE, referred TMT to slides linked to the TMT agenda on CEQUAL modeling for the lower Snake River. In his presentation, Schneider noted that the travel

time through the Lower Granite pool (4.7 days) had decreased slightly due to lower temperatures. He said that the Orofino water temperatures of 76° were the warm point in the system, temperatures at Anatone were 72°, and Clearwater at Lewiston water temperatures were at 54.7°. Schneider's presentation displayed a base option of holding outflows at 12 kcfs through 7/13, then shifting to 9 kcfs for 7/14-31. An alternative option was to hold outflows at 12 kcfs through 7/16, shift to 9 kcfs for 7/17-27, then drop to 7.3 kcfs for 7/28-30. Schneider clarified that neither of these options considered Dworshak modeling for the August time frame. MT and CRITFC expressed some concern for potential temperature increases in mid-late July. TMT members discussed the alternative option, but the base option was determined to be the course of action for the time being. TMT members thanked Schneider and the COE for their modeling efforts.

Action/Next Steps from 7/11 TMT meeting:

- The COE will continue to operate Dworshak at 12 kcfs until the evening of 7/13, when the COE will shift to full power house (9-9.5 kcfs).
- Dworshak temperatures will be closely monitored, and TMT members will be notified by the COE if temperatures spike between now and the 7/18 TMT meeting.
- Dworshak operations will be on the agenda for the 7/18 TMT meeting.

UPDATE - 7/13 TMT Conference Call:

An unscheduled TMT Conference Call was held to discuss the latest Dworshak modeling results. Mike Schneider walked TMT members through base and alternative scenarios that were posted as a link to the TMT website and noted that with the base option, modeled temperatures went above 20°, while the alternative option of holding outflows at 12 kcfs for three additional days was projected to hold temperatures at or below 20°. Salmon Managers present on the call: NOAA, USFWS, ID, Nez Perce Tribe, asked clarifying questions regarding the CEQUAL modeling assumptions and acknowledged the challenge in managing the complex conditions. During the TMT call, Russ Kiefer, ID, suggested an operation of holding outflows at 12 kcfs through 7/14, shifting to 11 kcfs for 7/15, and dropping to full power house (9-9.5 kcfs) on 7/16. Greg Haller, Nez Perce Tribe, acknowledged Kiefer's suggestion as a compromise and supported it if release temperatures could be slightly reduced. Howard Burge, USFWS, said the Federal Hatchery would be supported by temperatures no lower than 43°. Cathy Hlebechuk, COE, said that the project was currently operating with one small unit in undershot mode, with release temperatures of 43.8-43.9°. The COE and the Nez Perce Tribe expressed concern for the end of August Dworshak elevation.

Action/Next Steps from 7/13 Conference Call:

- The COE will operate Dworshak with outflows of 12 kcfs until 2200 hours on 7/14, when the COE will shift to 11 kcfs. The COE will operate two units in undershot mode, while trying to maintain temperatures of no less than 43°.
- The COE will shift to full power house (9-9.5 kcfs) at 2200 hours on 7/15.
- Temperatures and flows at the project will be closely monitored and TMT will revisit Dworshak operations at the 7/18 meeting.

- Dave Statler, Nez Perce Tribe requested the COE generate a graph of projected Dworshak elevations, given the operations-to-date, to be included for discussion at the 7/18 TMT meeting.

Libby/Hungry Horse Operations

Cathy Hlebechuk, COE, reported that Regional Executives will meet on 7/17 to discuss Libby operations, per the 6/29 IT conference call. She referred TMT to updated operation scenarios, linked to the TMT agenda and noted Libby was releasing 17.3 kcfs. The COE's most current forecast and that of the RFC ESP showed total flows in the range of 6.89-7.2 MAF at Libby. Jim Litchfield, Montana, reiterated the objective of the Montana proposal: to maintain fairly flat 15 kcfs outflows through August followed by a gradual ramp down in September and thanked the COE for graphing this option. Also linked to the agenda was a 2007 sturgeon operations graph, showing Libby temperatures remaining at an optimal level. Pat McGrane, BOR, said that if Hungry Horse held flows at 4.4 kcfs, the project would be 17' from full by the end of August.

Action/Next Steps: A Regional Executive meeting to discuss Libby operations will be held on 7/17 at 3:30 p.m. TMT will receive an update at the 7/18 meeting.

2007 Summer Treaty Fishing

Kyle Dittmer, CRITFC, referred TMT to a summary of 2007 treaty fishing, linked to the TMT agenda. Dittmer characterized the 2007 season as good overall, and said that final counts would be available in the near future. Dittmer said he would encourage discussion between COE managers, CRITFC and Tribal managers on the drop in Bonneville pool elevation on 6/23-24 that impacted platform (non-treaty) fishing. Cathy Hlebechuk, COE, acknowledged the desire for further discussion of the issue and noted that Treaty Fishing discussions were occurring through the Remand process.

BPA Procedures for Power System Emergencies

Tony Norris, BPA, referred TMT to two documents linked to the TMT agenda: a letter written by Stephen Oliver, BPA, describing procedures that need to take place before an emergency is declared and how neighboring systems would be affected; and an internal, BPA 'real time' guiding document that describes procedures for emergencies. Norris said the procedures have been distributed to the Real Time schedulers who work 24 hours/day. Norris characterized the procedures as a 'living document' and clarified that the letter from Oliver had been filed with the court, but the procedures had not. Cindy Henriksen, COE, added that there were discussions happening at the policy level and through the remand process about policy and procedures regarding system emergencies, and that there would be no changes to TMT's emergency protocols during this season. Norris asked TMT members to review the protocols document with special attention to the actions listed in Step 6. Norris clarified that the BPA protocols do not supercede the protocols listed in the TMT guidelines and TMT members acknowledged the BPA need to have internal guidance in place.

Action/Next Steps: TMT members should direct edits/suggestions for changes to the BPA document to Norris.

Flow Augmentation in the Lower Snake River

Pat McGrane, BOR, said this year's use of 427 KAF was formalized in the Nez Perce Settlement and that it would continue through the middle-end of August. For details on this, see the document linked to the agenda that show 2007 flow augmentation estimates as of 7/10.

Operations Review

Don Faulkner, COE, reported that an outage at Little Goose's T1 unit had begun at 0730 on 7/13 and would conclude at 1700 hours on 7/14. The outage was not expected to have any effect on fish. Faulkner also reported on an Ice Harbor request for 1-2 hour outages to test a large unit, which would require a drop in spill levels. Salmon Managers requested the operation be done in September, after fish spill ends but made a recommendation to discuss the request at the 7/18 meeting and make a decision after more specifics are made available.

Reservoirs – Cathy Hlebechuk and Pat McGrane reported on reservoirs. Hungry Horse was at elevation 3557.5' with outflows of 4.4 kcfs. Grand Coulee was full, at elevation 1290' and targeting an elevation of 1278' by 8/31. Libby was at elevation 2453.5', with inflows of 20 kcfs and outflows of 17.3 kcfs. Dworshak was at elevation 1590.6', with inflows of 1.5 kcfs and outflows of 12 kcfs. Spring seasonal averages were 61 kcfs at Lower Granite, and 240 kcfs at McNary, with new summer average targets of 50 kcfs at Lower Granite and 200 kcfs at McNary. No changes were reported for Bonneville.

Fish – Paul Wagner, NOAA, reported on juvenile fish: yearling Chinook passage had ended, but sub-yearling daily passage numbers were in the 2-4000 range at Lower Granite. Wagner said that there was an issue with the efficiency of collection rates at Lower Granite, Little Goose and Lower Monumental, and that the actual counts may be up to four times as many as estimated. McNary passage numbers had likely peaked, and steelhead passage was nearing its end.

Cindy LeFleur, WA, reported on adult fish: passage at Bonneville was in the 5-700 per day range, with counts at 39,000 thus far and expected to still be under the predicted total of 45,000 by July 16. She said that sockeye and steelhead were running close to predicted, with sockeye counts in the range of 20,000. Spring Chinook jack counts remained high, and were expected to be in the 82-85,000 range.

Power system – Tony Norris, BPA, noted that the power system was well positioned to meet loads.

Water quality – Laura Hamilton, COE, said that there had been two TDG exceedances near Camas over the last ten days. Temperatures in the Lower Columbia and Lower Snake River were both in the 68-69° range.

Next face-to-face TMT meeting: Wednesday, July 18th

Agenda items will include:

- Review/Finalize Facilitator's Notes and Meeting Minutes
- Updated Flow Forecasts
- Dworshak Operations
- Libby/Hungry Horse Operations – Report from Executive meeting on 7/17.
- Ice Harbor Outage Request
- Operations Review

**Columbia River Regional Forum
Technical Management Team Meeting
July 11, 2007**

1. Welcome and Introductions

Today's TMT meeting was chaired by Cathy Hlebechuk and facilitated by Robin Harkless, with representatives from BPA, BOR, COE, Montana, NOAA, Oregon, Washington, CRITFC, the Nez Perce Tribe and FPC attending. 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 Facilitator's Notes and Meeting Minutes

The facilitator's notes for conference calls on July 5 and 9 have been posted to the TMT website, as well as the June 27 official minutes, Robin Harkless said. Official minutes from the July 5 and 9 conference calls will be posted this week.

Kyle Dittmer (CRITFC) commented on the June 27 facilitator's notes under the Treaty Fishing section. The draft pool has been causing a problem for platform fishers, not gillnet fishers as the notes said. The platform fishery is ongoing, not a special operation like the treaty fishery involving SORs every summer, Hlebechuk explained.

3. Priest Rapids Update

Russell Langshaw (Grant County PUD) gave a final briefing on this year's operation, which ended June 20. A final report will be issued in September. Langshaw described the final days of operations June 18-20:

- Discharges were 144 to 162.7 kcfs.
- Daily deltas were 12.6 to 55.5 kcfs.
- Protection flows were 150 kcfs minimum, with 40 kcfs and 60 kcfs flow bands.

He summed up 2007 season operations:

- Daily mean discharges were 171.7 kcfs.
- The mean daily delta was 38.2 kcfs.
- There were a total of 4 minor exceedances, with a mean of 1.4 kcfs.
- There were 5 days of 40 kcfs bands, 42 days of 60 kcfs bands, and 21 days of 150 kcfs minimum flows.
- The mean daily delta for this operation was less than the smallest protection criteria.

Langshaw offered kudos for the Grant Co. PUD operators who helped make this a great season, and Wagner complimented them all on a successful year. Langshaw will participate in the year-end TMT review in November.

4. Updated Flow Forecasts

A. Dworshak. The ESP hydrograph is fairly flat, with current outflows of about 2.5 kcfs, Hlebechuk said. The June final COE inflow forecast (the COE does not prepare a July forecast) and the July RFC final forecast are 1.86 and 1.85 MAF, respectively.

B. Libby. The ESP hydrograph shows that there is potential for thunderstorm activity in late August in the basin, so this forecast is a bit more varied than the one for Dworshak, Hlebechuk said. The whiskers plot for Libby shows a gradual decline throughout August.

C. Hungry Horse. Drafting a couple tenths a day, Hungry Horse is in recession and 2.5 feet from full, releasing 4.4 kcfs, Pat McGrane (BOR) said.

5. Dworshak Operations

Outflows were increased to 12 kcfs on Thursday, July 5. There was a TMT call on Monday, July 9, to decide whether the 12 kcfs outflows should continue through Friday night. The plan was to reevaluate that decision today in light of new modeling information.

First, Tina Lundell (COE) reported on temperatures at Dworshak. At 5 a.m. today the water temperature of the outflow from Dworshak was 43.5 degrees F, with Lower Granite tailwater temperatures at 67 degrees F and holding. The forebay elevation of Dworshak reservoir was 1,590.6 feet.

Mike Schneider (COE) presented updated CEQUAL modeling results (which take a day to process, so he used yesterday's (July 10) forecasts). The good news is that forecasted air temperatures are dropping a bit – to 105 degrees F on July 12 and 13. Yesterday's weather forecasts were for 110 degrees July 12 at Lewiston, so the outlook now is cooler.

Water release temperatures at Lower Granite are about 67 degrees F and trending flat, with maybe a slight decline that corresponds with the arrival of 12 kcfs discharges that started July 5, Schneider said. Conditions on the Snake River at Anatone gage remained fairly flat at about 22 degrees C, or 72 degrees F for the last 5 days. The area is expected to warm up later this week. Temperatures on the Clearwater River have been about 43.5 degrees F at the 12 kcfs release point with the regulating outlets in operation and one gate of one of the small turbines in undershot mode. Orofino gage is registering 3.3 kcfs

outflows at 24.5 degrees C, or 76 degrees F, a warm point in the system. The current estimate is that Clearwater flows are making a 21% constant contribution to the Snake.

The end of excess water for Dworshak releases is here, Schneider said. According to the updated forecast, there are about 2 more days of 12 kcfs outflows available in the water supply before needing to drop back to powerhouse capacity to meet the end of August elevation target. Schneider presented two options for TMT to consider:

- The base case shows outflows of 12 kcfs continuing through Friday, July 13, ramping down to powerhouse capacity for the rest of July.
- The alternative provides 3 additional days of 12 kcfs flows through July 16 before dropping to full powerhouse on July 17 for the rest of July.

Dittmer asked, are these results from the official National Weather Service forecast for Lewiston or the raw model data for Lewiston? The difference is significant. The numbers came from NOAA's webpage showing the 7-day forecast for Lewiston, Schneider said, which is the official forecast. Last year there were opportunities in August to back off powerhouse flows and still meet the 20 degrees C target and target elevations, so the barrel is not necessarily dry. Schneider recommended extending the operations at 12 kcfs outflows, knowing it's likely the spent water can not be recovered later.

The COE will plan on continuing 12 kcfs outflows, dropping to full powerhouse on Friday evening, July 13, Hlebechuk said. Jim Litchfield (Montana) expressed concern because this is a difficult period heat-wise until mid August. The releases from Hells Canyon have been small, which makes Dworshak releases more effective, Dittmer said. Continuing 12 kcfs outflows should produce the desired effects at Lower Granite at least through next Thursday morning, Lundell said.

6. Montana Proposal for Libby and Hungry Horse

Because TMT could not reach consensus on Libby operations, the decision was elevated to IT on July 6, then further elevated to the Federal Executive level, Cathy Hlebechuk (COE) reported. The Federal Executive meeting is scheduled for July 17.

Cathy Hlebechuk provided an overview of Libby operations. Outflows are 17.3 kcfs, with an assumption that outflows from 17 to 17.5 kcfs will achieve elevation 2,439 feet by the end of August. The model shows a drop to 6 kcfs outflows in September.

Jim Litchfield asked, will outflows be held at 17.3 kcfs for now? The plan is to maintain that level, Hlebechuk said. There are two different volume forecasts for July 2 – the ESP forecast is 6.90 maf, and the regression forecast is 7.2 maf. The COE June final forecast was around 7 maf.

The second graph attached to today's TMT agenda shows the Montana proposal, or about 15 kcfs out through the end of August, stepping down in September and using STP flows to reach elevation 2,444.4 feet on Aug. 31. Hlebechuk asked, do the Salmon Managers want Libby to reach elevation 2,439 feet by Aug. 31?

The substance of the Montana proposal is a compromise on the full implementation of the Council's mainstem amendments vs. the historic operation under the BiOps, Jim Litchfield said. Rather than target a specific ending elevation, the Montana proposal was based on a reasonable flat flow according to the volume forecast. The volume forecast shown on this graph happens to draft 20 feet out by the end of September, which would be an acceptable outcome for Montana as a compromise. Litchfield emphasized that this graph depicts exactly the conditions Montana was hoping to achieve.

A third graph attached to today's agenda shows Libby dam temperatures in the optimal level, with Bonner's Ferry temperatures in that range also, Hlebechuk said.

Pat McGrane (BOR) described Hungry Horse operations. For the time being, 4.4 kcfs are being released, a slight difference from what is reported on the water data page. Continuing 4.4 kcfs outflows would put the reservoir at 17 feet from full by end August, according to BOR's calculations. This operation will also be discussed at the regional executive meeting next Tuesday.

8. Review of 2007 Summer Treaty Fishery

Kyle Dittmer (CRITFC) reported on three weeks of treaty fishing under two SORs. Things in general look good. Bonneville pool has been in compliance with the 1 foot criteria requested under the SOR for 90% of the time, a 3% improvement over summer 2006 operations. The Dalles pool achieved 84% compliance with the terms of the SOR, or a 22% improvement over last year. The John Day pool achieved 100% compliance this year; last year's rate was 99%.

The fishing effort was generally successful this year. However, the weekend of June 23-24 brought precipitous drops in the elevation of Bonneville pool as a result of a COE operation for recreation and human safety. Dittmer showed TMT photos of the gap between fishing platforms and the water level at Bonneville pool, which generated a lot of complaints. The tribe decided to end the gillnet fishery early and will finish this season via the platform fishery at the end of July. Hlebechuk noted the low elevations June 23-24 were coordinated

with CRITFC and occurred outside the Treaty Fishing periods. Future changes in the agreement for these operations should be handled at the remand meetings, Hlebechuk said.

9. BPA Power Emergency Protocols

Tony Norris (BPA) briefed TMT on BPA's internal procedure for power system emergencies, which has been evolving since the April 3 event where some units operate outside 1% peak efficiency. Some TMT members have been discussing a possible revision to the current TMT protocols. However, the process has been stalled since the Action Agencies were unable to arrive at a consensus that a modification is necessary for this season. Judge Redden emphasized that on April 3, BPA's duty schedulers did not have clear instructions on how to proceed. In light of this, BPA senior managers were uncomfortable moving into summer without giving clear direction to their power operations staff.

The two documents linked to today's TMT agenda are currently in the hands of BPA's duty schedulers and staff to make decisions if a power system emergency should occur, Norris said. The documents cover two types of emergencies: BPA energy shortages, and shortages in neighboring systems.

The letter from Steve Oliver of BPA (first attachment) describes the process a neighboring power system must follow before BPA will consider declaring a power system emergency that could result in modifications to fish operations. The intent is to impress upon neighboring systems that they must make every effort to avoid placing BPA in the position of choosing between health and human safety and fish operations. This letter has been provided to the court.

The second attachment, called BPA Procedures for Power System Emergencies, spells out the steps for coordinating energy shortage events within BPA. The goals of the procedure are to prevent or delay situations that would result in either the shedding of firm load or the interruption of fish operations. If those efforts fail, Norris said, the procedure also outlines the protocols for transitioning into emergency operations. These emergency protocols are considered BPA internal procedures and have not been filed with the court.

Norris pointed out a notable difference in this list and the current TMT protocols: Any interruption of fish operations is considered an emergency. Actions that interrupt fish operations are not to be implemented without a request from BPA power services management for a NERC (North American Energy Electric Reliability Council) Alert, a significant step in electric reliability that is never undertaken lightly. Once the declaration has been requested, the duty scheduler will follow the protocol to implement emergency actions. The emergency action list is somewhat altered from what is currently in the TMT protocols. In the effort to provide the best list possible, Norris worked with

individual salmon managers to develop the list that's attached to today's TMT agenda. He invited the Salmon Managers to comment or provide changes to the list. Not all the prioritized actions would equally resolve a given problem. Therefore, the most effective actions will be chosen, though every attempt will be made in an emergency to follow the prioritized list.

TMT discussed the potential for energy conservation to meet BPA load requirements. This is not a viable option in a near term emergency, i.e. possible power shortages that are only 3 hours away. Harvesting conservation megawatts takes months of investing in public promotion plus possibly gubernatorial involvement. Nonetheless, appeals for energy conservation are part of the NERC Alert process. If TMT wants to update list of TMT protocols so they match up with this list, that would be a welcome recommendation, Norris said. While TMT and ultimately the whole region at the executive level could be drawn into this process, essentially it's a BPA document, Hlebechuk said.

Norris invited TMT members to converse with Terry Larson and Steve Kerns from BPA, who were present at the meeting. Kerns emphasized that NERC Alerts are extremely rare in the energy industry and are taken very seriously. In terms of declaring an emergency, a NERC Alert would be issued first, then BPA would take action. Ruth Burris (PGE) asked, at what point might BPA's customers be affected? That would happen in step 5, the NERC Alert, Kerns replied. TMT members were invited to review the documents attached to today's agenda and give their comments to Tony Norris.

Cindy Henriksen of the Corps clarified the Corps view of this document. This is a BPA internal document and it is not endorsed by other Action Agencies. The Corps finds that this document contains two parts, the process part and the action part. Currently the process part is not altogether consistent with the current August 2006 TMT Emergency Protocols. The Corps will look at that to see if the BPA document can be brought up that level. The action part is the list of actions to take in an emergency. The Corps agrees the TMT should look at those actions to see if a list can be agreed upon. As for the overarching process under an emergency, the Corps is not prepared to change the process leading into an Emergency declaration from what is in the currently agreed upon TMT Emergency Protocols. If there is a desire to change the definitions of emergency and how the region leads into one, that will be discussed under the Remand process.

10. Flow Augmentation in the Upper Snake River

Pat McGrane (BOR) provided information on BOR's expectations for flow augmentation volumes this year. Despite it being one of the driest years on record in the upper Snake, BOR expects 427 kaf of water supplies, mainly due to the use of powerhead space in reservoirs. Powerhead space is water stored above turbine intakes in the reservoir. Normally considered inactive space,

unavailable for drafting, powerhead space is nevertheless water that can be used.

BOR hasn't used much powerhead space since 1994 because of water rights' issues with the State of Idaho. However, the Nez Perce settlement acknowledged that powerhead space can be included in BOR's supply of flow augmentation water, but only in years when 427 kaf would otherwise not be available.

Problems can arise in a second or third dry year, which might result in BOR having to shut down the Palisades power plant due to lack of powerhead space. Under that scenario, BOR would have to draw the space down to compensate irrigators.

BOR's current estimate of water supplies for flow augmentation from the upper Snake above Brownlee is 427 kaf, including powerhead space. Not much powerhead space (157 kaf) is available at the Palisades plant, with much of that being used this year. This means a good winter is urgently needed in terms of the water supply, McGrane said.

11. Operations Review

A. Reservoirs. Don Faulkner (COE) informed TMT about an outage at Little Goose. The project is experiencing transformer problems that took units 1 through 4 out of service for a few days. At the beginning and end of the outage, the whole powerhouse will go offline for half an hour. The operation started this morning at 7:30 am and will be completed at 5 pm on Thursday. The units will be out of service for 1 or 2 days.

Even using the small unit at Ice Harbor we have been unable to meet specified spill quantities. In spite of that Faulkner asked, would TMT allow one of the larger units (U-4) to be started and tested? The question arose because U-4 has just completed a long term overhaul and the project wanted to perform some tests. The tests would be short in duration, and take place a couple times. Rick Kruger (Oregon) and Jim Litchfield (Montana) expressed a preference for doing the test in August after the peak fish migration has passed. Faulkner said he would delay the test, which should take only a few hours to perform.

Hungry Horse is at elevation 3,557.5 feet, releasing 4.4 kcfs, McGrane said. Grand Coulee is full at elevation 1,290 feet, passing inflows and headed to elevation 1,278 by end August. Libby is at elevation 2,453.5 feet, with 20 kcfs inflows that are dropping steeply, and 17.3 kcfs outflows. Dworshak is at elevation 1,590.6 feet with 1.5 kcfs inflows and 12 kcfs outflows. Lower Granite seasonal average flows for April 3-June 20 were 61 kcfs; the flow objective was 85 kcfs. For the past 7 days, Lower Granite has averaged 35 kcfs, and McNary has averaged 156 kcfs. McNary spring flows for April 10-June 30 were 240 kcfs,

with an objective of 237 kcfs. McNary flows have been 158 kcfs for July so far. There's a new summer target at McNary of 200 kcfs.

B. Fish. The yearling Chinook migration is done, Wagner said, except for a few fish in the lower Columbia. The subyearling Chinook migration is busy, with Lower Granite passage indices showing 4,000 fish per day. Collection efficiency at Lower Granite is low, Wagner said – so four times that number should bring the passage index closer to reality. Collection efficiency at Little Goose is also low, and is only 6% at Lower Granite. The spilling of subyearlings at McNary has probably ended. Subyearling passage at Lower Granite is extremely low. Of 4,095 wild fish that were tagged, only 181 were detected.

Steelhead passage continues at Little Goose, but is nearing its end, Wagner said. The number of steelhead subyearlings is higher than usual for this time of year. Litchfield asked whether this level of collection efficiency is new. RSWs are amazingly efficient – they seem to be passing fish like crazy, Wagner said. The amount of spill provided for subyearlings the past couple years is new.

About 500 to 700 adult fish are passing Bonneville daily, Wagner said. Cindy LeFleur (WDFW) reported on summer Chinook adult runs. Predictions for June 16-July 31 were about 45,000 fish, but are coming in under 40,000 fish. This year's sockeye salmon returns are poor – somewhere in the mid 20,000 range, but close to what WDFW projected. Summer Chinook runs will be lower than predicted.

Jack Chinook returns for spring were impressive, while summer jack Chinook returns are above average. The run size is around 82,000 to 85,000 fish, with a prediction of 78,000 fish for this year.

C. Power System. There's a lot of load on BPA thanks to hot weather, Norris said. Nevertheless, BPA is well positioned to meet load, and California is in good shape.

D. Water Quality. There were two exceedances at Camas-Washougal gage over the past 10 days, Laura Hamilton (COE) said. Flows have been low. Exceedances are posted on the TMT web page twice a month.

13. Next TMT Meeting

The next regularly scheduled TMT meeting will be on Wednesday, July 18 and will include discussion of updated flow forecasts, the Ice Harbor outage, Dworshak operations, the Federal Executive meeting on Libby/Hungry Horse operations, and the usual operations review . This meeting summary was prepared by consultant and writer Pat Vivian.

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Laura Hamilton	COE
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