

COLUMBIA RIVER REGIONAL FORUM

TECHNICAL MANAGEMENT TEAM

July 2, 2008 Meeting

FACILITATOR'S SUMMARY NOTES ON FUTURE ACTIONS

Facilitator: Robin Gumpert

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 Minutes/Agenda

The 6/6, 6/11 and 6/18 official meeting minutes and facilitator notes had been posted to the web. No further changes were made to the 6/6 or 6/11 notes and minutes during the meeting and they were considered final. Dave Wills, USFWS, and Kyle Dittmer, CRITFC, mentioned minor edits to the 6/18 facilitator notes during the meeting; with those changes, the 6/18 facilitator notes and official minutes were considered final.

2008 Summer Treaty Fishing

Kyle Dittmer, CRITFC, reported on SOR 2008-C3, posted as a link to the TMT agenda. The request was for stable 1' elevation constraints for The Dalles, John Day, and Bonneville pools from 6 a.m. on July 1st - 6 p.m. on July 3rd and also 6 a.m. July 8th - 6 p.m. July 10th. The COE planned to operate the Bonneville pool under a 1.5' hard /1' soft constraint, The Dalles under a 3' hard/1.5' soft constraint and John Day under a 1.5' hard constraint, as was the case for the two previous treaty fishing requests.

Action/Next Steps: CRITFC will continue to inform the COE of expected dates/times for the summer treaty fishing season following each Tribal Compact meeting.

Dworshak Operations Update

Steve Hall, COE, reported that Dworshak was at elevation 1599.2' with inflows of 19 kcfs. Hall said the COE's plan for the near term was to operate Dworshak within .5' from full through 7/6; Kyle Dittmer made a request on behalf of CRITFC and the Nez Perce Tribe that the COE hold Dworshak as close to full pool as possible through the July 4th holiday weekend. Hall clarified that any elevation at or above 1599.5' is considered full pool from the COE's perspective. Idaho expressed support for the short-term plan as outlined by the COE. Tina Lundell, COE, referred TMT to a thermocline graph posted as a link to the TMT agenda; she noted the lower than average thermocline and said that current outflow temperatures were near 46°F. The COE said they planned to use an overshot operation if necessary to continue to manage temperatures as the season progresses. Dave Wills, USFWS, clarified that temperatures between 45-48°F (but no lower than 45°F) were acceptable from the Dworshak Hatchery's perspective. Kyle Dittmer, CRITFC, reported that temperature modeling results sent to him by Ben Cope,

EPA, showed conditions would likely be moderate throughout the summer operation timeframe.

Action/ Next Steps:

- The COE will operate Dworshak within .5' from full pool through 7/6.
- After 7/6 the project will pass inflows, with adjustments made as needed to achieve temperature targets.
- This item will be on the agenda for the 7/16 TMT meeting.

Libby & Hungry Horse Summer Operations

Jim Litchfield, MT, reported on SOR #2008-MT-2, posted as a link to the TMT agenda and addressed to TMT members as well as Sue Ireland, Kootenai Tribe of Idaho (as a shared signatory to the SOR). He briefly reviewed the justification, biological objectives and specific flows that were part of the request: for Libby, 17 kcfs flows through July and 12 kcfs flows through August, with no specific request for September operations. The request at Hungry Horse was to provide stable flows of 4.5 kcfs through September. Litchfield said that the SOR was a good faith effort to show respect for the multiple interests and uses of the system, providing more flows to the lower river in July when most needed for migrating fish, and lower flows in August (fairly steady and avoiding a double peak) to support upriver resident fish. He qualified the flow requests as a compromise between guidance in the 2008 BiOp and that from previous BiOps. He acknowledged that September flow recommendations will need to be informed by existing conditions as the season progresses.

Amy Reese, COE, referred TMT to several graphs posted as links to the TMT agenda; based on June 30 ESP traces, they showed flows associated with achieving an elevation of 2439' by the end of August. The graphs also showed traces for flows associated with the Montana proposal. She noted the range of outflows that would be associated with each, depending on the actual inflows at the projects. Reese clarified that inflow traces used to develop the graph had a median volume of just less than 5.8 MAF and that the Corps June April-August statistical volume forecast was 6.5 MAF.

TMT members discussed the graphs, the Montana proposal and the follow up action item from the 6/18 TMT meeting for agency interpretations of Libby/Hungry Horse operations for 2007 and the guidance behind recommendations for 2008. The following bullets summarize feedback provided by TMT members and other interested parties:

- NOAA: The Montana proposal is very good particularly given this good flow year. That said, 2007 operations chose a flow rate with the intent of drafting Libby to 20' from full pool by the end of August. For 2008 operations, in accordance with the court order to roll over 2007 operations, NOAA supports selecting a flow plan with the intent of drafting Libby 20' from full pool, based on the best available information as the season progresses.
- OR: Agree with NOAA's interpretation of the intent behind 2007 operations; support the same intent for 2008, and Montana's proposal does not appear to do that. Supports setting target flows today for both Libby and Hungry Horse that would achieve 20' drafts by the end of August. Acknowledge the need to set flows to even turbine loadings.

- ID: Support either the proposed operations for Libby in August – look to COE for their input.
- USFWS: No clear agency interpretation of intent behind 2007 operations at this point; no objection to 2007 rollover intent as described by NOAA.
- COE: agree that for 2007 flows were selected based on the elevation target for the end of August. As of today's meeting, the COE plans to operate Libby at 17 kcfs for the next two weeks, with the intent to draft 20' from full pool by the end of August.
- BOR: Appreciate the Montana proposal, and, the BOR is committed to rollover the intent of 2007 operations for Hungry Horse. The BOR will determine summer flows for Hungry Horse needed to achieve the 20' draft following refill (expected late next week); an early estimation is that flows may be set in the 6.3-6.7 kcfs range later in July and the BOR objective will be for as flat of a flow as possible.
- BPA: Agree with setting flow targets to even turbine loadings.
- MT: Given the response from the action agencies, will need to have further internal policy discussions; and there may be a need to elevate the issue to IT. Would be helpful if Hungry Horse flows could be established today, to provide the most flexibility for decision-making on this issue.
- Kootenai Tribe of Idaho: As a signatory to the SOR, supports Montana's proposed operation.
- CRITFC: Supports rollover of 2007 operations, and supports Oregon's interpretation and position.

Following this part of the discussion, the Action Agencies and Salmon Members each held a caucus. Rudd Turner, COE, clarified the COE's policy perspective on summer operations for Libby: while fully supportive of the 2008 BiOp, the COE is committed to a rollover of the intent behind 2007 operations (drafting Libby to 2439' by the end of August). The COE remains open to the region reaching consensus for July and August operations. Turner noted that the COE would need to notify the court of operations decisions as adjustments are made in order to reach the end of August target elevation. He added that the COE would need to operate to meet even turbine loading at Libby; Amy Reese, COE, informed TMT that flows for a three unit operation would be 15 kcfs.

Action/ Next Steps:

- Montana agreed to consider the new proposed operation and notify the COE by end of day whether it was acceptable to move to a flat flow (projected at 15 kcfs at Libby and around 6.3-6.7 kcfs at Hungry Horse) as soon as possible and continue to target 20' from full at both projects.
- The COE will review the forecasts and determine a day to reduce to a 3 unit full load operation at Libby dam that targets 2439 feet at the end of August.
- Following refill of Hungry Horse, the BOR will send TMT members an email (expected by the end of next week), communicating the date of refill and the flow rates that will draft the project 20' by the end of August.

- Libby/Hungry Horse summer operations are on the agenda for the July 10th IT meeting; operations will be discussed as necessary.
- This item will be on the agenda for the 7/16 TMT meeting.

McNary Transport

Dan Feil, COE, reported that transport at McNary will begin when conditions are no longer “spring-like” (temps of 62°F or higher and flows under 220 kcfs.) Although temperatures have just recently reached 62°, flows at the project were in the range of 320-350 kcfs. He added that the TSW gate hoist work is complete, enabling transport at the project for this year and that the subyearling run is at its peak and expected to taper off in the next couple of weeks.

Action/Next Steps: McNary Transportation operations will be discussed at the 7/16 TMT meeting.

Emergency Protocols/Generation Action Plan

Tony Norris, BPA, referred TMT to the Emergency Protocols posted as a link to the TMT agenda. He noted that the new protocols reflect the current context of an “Emergency” that is now defined as an interruption of a fish protection measure. The new protocols are now far less confusing and generically address how the Action Agencies communicate to TMT when an emergency is expected or occurs. Norris also highlighted that the attachments to the Protocols are Action Plans designated to address specific types of emergencies. Norris noted that TMT members have been part of the document’s development and he asked that all other interested parties review the document prior to the next scheduled TMT meeting on July 16, for formal finalization and adoption as Appendix 1 to the Water Management Plan. Regarding the Emergency Actions List, Norris reported that Bonneville Powerhouse 2 had been added to the end of the list per recommendations from the salmon managers as discussed at FPAC. The following TMT members weighed in on the latest draft:

- NOAA: no objection
- USFWS: no objection
- BOR: no objection
- COE: no objection
- MT: no objection
- OR: no objection
- ID: no objection

Action/Next Steps:

- BPA will adopt the Emergency Generation Action Plan as written into the Emergency Protocols. As this is a living document, edits may be sent in at any time; CRITFC intended to confirm it had been reviewed and share any comments/approval at the next TMT meeting.
- The Emergency Protocols will be on the agenda for finalization at the 7/16 TMT meeting; edits/comments may be emailed to Jim Adams, COE, prior to the meeting.

Operations Review

Reservoirs: Libby was operating at 2440.5', with inflows of 35.3 kcfs and outflows of 17 kcfs. Albeni Falls was at 2061.7', with inflows of 57.7 kcfs and outflows of 56.8 kcfs. Dworshak was at 1599.2' with outflows of 15.8 kcfs. Seven day average flows at McNary were 327 kcfs, Lower Granite flows were 105 kcfs and Bonneville average flows were 314 kcfs. Averages for the spring season well exceeded spring flow objectives. Grand Coulee was operating at 1285.1'; Hungry Horse was at 3557.4' with outflows shifting from 9 kcfs to 11.4 kcfs on 7/2.

Fish: Paul Wagner, NOAA, reported that Jack and Sockeye counts were very strong, summer Chinook were fairly strong and yearling migration counts were winding down. The peak for subyearlings had just passed and the steelhead migration was nearing its end.

Power System: Nothing to report at this time.

Water Quality: Jim Adams, COE, reported that temperatures are much lower than average. He referred TMT to daily TDG data, showing many exceedances across projects for the May-June timeframe. For early July, the COE is observing exceedances mostly in the forebays, and the COE continues to manage TDG as best as they can given the high flows. Adams said he expected exceedances to diminish over the next couple of weeks. Regarding Gas Bubble Trauma (GBT) sampling, there have been a few incidences of GBT at Bonneville, Little Goose and Lower Monumental, but nothing out of the ordinary.

Other:

- Dan Feil, COE, said that repair work on the Bonneville corner collector hydrophone was complete and the operations are set up well for the summer study.
- John Roache, BOR, reported that 487 KAF is expected to be available for Upper Snake flow augmentation this year. More details will be provided at the 7/16 TMT meeting.

Next TMT Meeting: 7/16 face-to-face

Agenda Items include:

- Finalize notes/minutes
- Dworshak Operations
- Libby/Hungry Horse Operations
- McNary Transport
- Emergency Protocols
- Upper Snake Flow Augmentation
- Operations Review

**Columbia River Regional Forum
Technical Management Team Meeting
July 2, 2008**

1. Introduction

Today's TMT meeting was chaired by Jim Adams (COE) and facilitated by Robin Gumpert (DS Consulting) with representatives of BOR, NOAA, COE, USFWS, BPA, CRITFC, Oregon, Montana, Idaho, the Kootenai Tribe, and others participating. The following is a summary (not a verbatim transcript) of the topics discussed and decisions made at the meeting. Anyone with questions or comments about these notes should provide them to the TMT chair or bring them to the next meeting.

2. Review Meeting Minutes

There were no comments on either the facilitator's notes or official minutes for June 6 and 11, and no comments on the June 18 official minutes.

The June 18 facilitator's notes under "Dworshak Operations" now accurately reflect a statement made by Dave Wills (USFWS) that water temperatures of 46-48 degrees would be acceptable to the hatchery, but certainly nothing colder than that. Kyle Dittmer (CRITFC) suggested a small grammatical change to the June 18 facilitator's notes under "Treaty Fishery."

3. 2008 Summer Treaty Fishery – SOR 2008-C3

Kyle Dittmer (CRITFC) presented this SOR which CRITFC submitted to the COE last week. The fishery will run from 6 am on July 1 through 6 pm on July 3, and from 6 am on July 8 through 6 pm on July 10. The SOR asks for a 1-foot hard constraint on fluctuations in Bonneville, John Day and The Dalles pools. Last week CRITFC's net flight suggested there are 450 nets in the zone 6 pools, with 37% of those at Bonneville, 24% at The Dalles, and 39% at John Day pools.

The COE will provide the same conditions for this fishery as it has for the previous two treaty fisheries this season, Adams said. That includes a 1-foot soft constraint and a 1.5-foot hard constraint at Bonneville pool. Normal operating range at The Dalles pool is 3 feet, but the COE will operate The Dalles within a 1.5-foot range as a soft constraint during the fishery, with nighttime hours considered the most important. John Day pool will continue to be operated within its normal 1.5-foot range.

4. Dworshak Operations

Currently, the Dworshak pool is at 1,599.2 feet elevation, and the COE plans to keep it above that elevation until July 6, Steve Hall (COE) reported.

Inflows are about 19 kcfs but appear to be falling. As inflows drop, the project will pass inflows until it reaches full powerhouse capacity, currently 9.4 kcfs. Full powerhouse will be sustained until the COE receives a request for either flow or temperature augmentation. At this point, the COE is not certain the reservoir elevation will actually reach 1,600 feet, though inflows are still high. The intention is to reach at least 1,599.5 feet. Within half a foot is considered full.

CRIFTC requested that Dworshak be kept as close to the 1600 foot elevation as possible throughout July. **Idaho** expressed approval of the operational flexibility proposed by the COE.

Current outflow temperatures at Dworshak are 45.1 degrees F, Tina Lundell (COE) reported, using a combination of spillway and gates in an undershot mode. When the project isn't spilling, the operator will have to switch to overshot mode to get 44-45 degree F water. Lundell presented a graph linked to today's agenda, which shows that temperatures this year are about what they were last year. However, this year the top layers of the reservoir are cooler than last year. An appropriate target outflow temperature for this year would be 45 degrees F, about the same as this time last year. Dave Wills (USFWS) said temperatures of 46-48 degrees F would be acceptable at this point, while not ideal. If the water gets any colder than 45 degrees F, hatchery fish tend to stop feeding and growing.

Lower Granite tailwater temperatures are now 60 degrees F, when normally they would be pushing 68 degrees F this time of year, Adams said. The COE expressed some concern that releasing 47-48 degree F water now could drain the warmer portion of the reservoir, making it difficult to provide moderate temperatures later in the summer. The COE is watching this carefully. Wills suggested a notation on the graph showing the upper limit of overshot mode; Lundell will add that 35 feet of head is required.

TMT will check in on Dworshak operations at its next meeting July 16.

5. Libby/Hungry Horse Operations – SOR 2008-MT-2

Jim Litchfield (Montana) presented this SOR, offering a compromise between the historical operation and what's called for in the 2008 BiOp. The SOR calls for outflows to aid anadromous fish in July, balanced against the needs of resident fish in August and hopefully in September. The SOR does not specify September operations because Montana believes those should be discussed later as summer unfolds. In general, Montana wants stable or gradually declining flows into September. Discussion turned to individual projects.

A. Hungry Horse Dam. Full implementation of the operation called for in the 2008 BiOp would have been equivalent to an average 2.8 kcfs outflow from Hungry Horse. Implementation of the old operation would draft 20 feet from the

reservoir by end August, which would equal about 6.5 kcfs outflow. So **Montana** proposed 4.5 kcfs outflows, not a strict average but close to what happened last year. Outflows of 4.5 kcfs would provide a good aquatic environment in Montana.

BOR supports the Council's mainstem amendments and the 2008 BiOp but is committed to roll over 2007 operations per the court agreement, John Roache said. Last year, a flow for Hungry Horse was picked in late June targeting elevation 3,540 feet at the end of August, or 20 feet from full. That amounted to 4.4 kcfs flat outflows, with an actual elevation of 3,542.5 feet on Aug. 31. Hungry Horse ramped down to minimum flows after hitting that target. Like the COE (see below), BOR was not prepared to set a flow for Hungry Horse until the reservoir refills, due to uncertainty regarding inflows. According to ESP and STP traces that target 20 feet down by end August, Hungry Horse outflows should be 6.3-6.7 kcfs, Roache estimated. The BOR will notify TMT when Hungry Horse is near refill and a flat flow has been calculated, probably sometime late next week. The flat flow will be calculated based on the goal of reaching the end of August target elevation.

Montana asked whether it would be possible for TMT to agree today on rolling over last year's Hungry Horse operation of 4.5 kcfs flat outflows; **Oregon** said it would object to that operation.

B. Libby Dam. Operations are always more complex and uncertain at Libby than Horse, so Montana recommends that outflows of 17 kcfs continue through July, ramping down to 12 kcfs outflows in August. Last week's model runs indicated 17 kcfs is the predicted outflow needed to draft the full 20 feet out by end August, Litchfield noted. By contrast, if the reservoir were drafted in accordance with the 2008 BiOp and Council's mainstem amendments, the average outflow would have been 10 kcfs, for a difference of 7 kcfs. While the 2004 BiOp does call for 20 feet out by end August in both reservoirs, it also says that goal could be modified based on recommendations by the Council, Litchfield said. Therefore, Montana and the Kootenai Tribe have expected future operations to resemble the Council's mainstem amendments – which haven't happened, although last year was close.

Montana would like to establish a flow plan, rather than being held to a reservoir drafting limit, and expressed willingness to modify the flow plan as conditions change. What Montana wants to avoid is a sudden major increase in flows, creating the damaging double peak. The flow plan in the Montana SOR does present potential refill problems at Libby.

Last year's operation of 17.3 kcfs outflows began July 4 after being set in motion July 2, Adams recalled. Outflows of 17.3 kcfs continued until August 22, when they dropped to 15 kcfs until August 29, then to 13 kcfs and finally to 9 kcfs at the beginning of September. The elevation of Libby reservoir on August 31, 2007, was 2,439.1 feet.

Amy Reese (COE Seattle) showed TMT one scenario for the current Libby operation (figures 1-3 attached to today's agenda) based on NWS-RFC ESP traces from June 30th. The daily modeled mean outflow from these inflow traces is 14.8 kcfs, with Libby outflows ranging from 11-20 kcfs now to reach 2,439 feet elevation by end August. This represents a median outflow volume of just under 6 maf. The current Corps volume water supply forecast is 6.535 maf. Modeled elevations in the Libby forebay showed a daily mean peak of 2,448.4 feet.

Reese then presented modeling results of operations according to the Montana SOR (figures 4-5 attached to today's agenda). Figure 4 shows outflow ranges, with the daily mean as the same throughout the model. Figure 5 shows elevations of Libby reservoir, with a daily mean peak elevation of 2,448.5 feet, or a little more than 10 feet from full. With this set of ESP traces, if the COE followed Montana's flow plan, the daily mean elevation at Libby on Aug. 31 would be 2,442.68 feet, or 3.5 feet above the 2,439 foot target elevation. The graphs include 10th and 90th percentile values that range from 2,437.13 to 2449.67 foot elevations, indicative of wide variations in the inflow forecast. Litchfield asked and Reese confirmed that targeting elevation 2,439 feet at Libby for end August results in outflows of 14.8 kcfs rather than 12 kcfs in July, as in the Montana SOR. The difference is 2.8 kcfs outflows. The median difference in Aug. 31 elevations between the two operations is 3.68 feet. Litchfield emphasized that this year's plentiful flows in the lower river make it a good time to accommodate Montana's request for a compromise operation that benefits resident fish. Discussion then turned to the Action Agencies' views of the Montana SOR.

In response to figure 5, **USFWS** asked whether flat flows would average 14.5 kcfs under the Montana SOR; Reese wasn't sure. Litchfield agreed that's a good point – a flat flow of 14.5 kcfs through July and August would provide the same volume of water over the same period as the Montana operation.

NOAA expressed support for the collaborative spirit behind the Montana proposal, but recalled that the foundation of last year's operation was picking a flow that would target elevations 20 feet from full at both projects. Therefore, a similar operation this year would be in accordance with the court order to roll over 2007 operations. The Action Agencies have the flexibility to deviate from last year's operation, but that would require full regional consensus. The Montana SOR involves a different flow pattern this year, while meeting the same objective, Litchfield replied. He asked whether NOAA could support that operation as a rollover. Picking a flat flow rate isn't the issue, it's literally setting the target elevation like we did last year, Wagner replied. There was discussion of whether a literal rollover means raising or lowering outflows to target elevation 2,439 feet at Libby. **Oregon** said that would be a literal rollover of 2007 operations.

Montana advocated an operation based on flows, not ending elevation, and recalled that last year, a vibration in the forecast caused the COE to keep outflows at 17 kcfs regardless of whether that would result in hitting elevation

2,439 feet at end August. Oregon recalled the 2007 plan was to maintain outflows if inflows exceeded forecasts, but adjust outflows if inflows were less than forecasted so as not to drain Libby below elevation 2,439 feet or Hungry Horse below elevation 3,540 feet; Montana agreed that's what happened last year. **Oregon** supported that operation, but couldn't support the Montana SOR because it doesn't target an elevation 20 feet from full.

Idaho expressed support for either operation. **USFWS** supported the operation as described by NOAA and Oregon because that would replicate the spirit of 2007 rollover. **CRITFC** supported Oregon's position and Judge Redden's order to roll over 2007 operations.

Last year, a flow volume was set and the COE committed to maintain that volume outflow unless there was a risk of drafting below the 2,439 foot elevation target for Libby, Adams recalled. Given the uncertainty regarding inflows and snowmelt this year, the **COE** was not prepared to set a flow rate today for ramping down Libby flows. Therefore, the COE position is to continue 17 kcfs outflows and allow for further discussion of this issue at TMT meetings.

Let's not assume that setting a flow in July to reach 20 feet below full will result in a rampdown, Oregon said, and the COE agreed. Flows of 17 kcfs are too high, Montana said. Oregon agreed that flows should be lower and supported setting a constant flow target now that will achieve the end of August elevation. Last year, the flow rate was set on July 2 using STP information from late June, BOR recalled. Nevertheless, the COE was not prepared to set a flow today. According to the STP traces, that rate would be somewhere around 16 kcfs, or the average of 17 and 14.8 kcfs, Reese said. The STP results called for 15.4 kcfs.

Litchfield asked, if we set a flat flow target that would target 20 feet out at Libby, what would that be? If flows dropped today, the rate would be 16 kcfs based on daily ESP traces, Reese replied. Targeting 2,439 feet by end August was an important framework of last year's decision regarding Libby operations, Rudd Turner recalled. But if there's a desire to shape some of that flow earlier in the summer, the COE could go along with that. The COE fully supports the 2008 BiOp and Council's mainstem amendments. However, under the court order to replicate 2007 operations, the COE will turn to the 2004 BiOp which recognizes that a primary objective of the draft at Libby and Hungry Horse is to help meet flow objectives for salmon and steelhead in the Columbia.

Montana asked whether Oregon could support an operation at Libby that targets flows of 15.0 kcfs. Probably, Oregon said. That would be equivalent to full load on 3 units, BPA said. The COE will look into efficient turbine loading and notify TMT via email of what the target flow will be. Montana agreed to consider that operation and, if possible, withdraw its request to elevate the issue to IT, which meets next on July 10.

In the meantime, pending information on turbine loadings, the operating plan for Libby is to continue passing 17 kcfs until the best forecast shows Libby should ramp down to three units (assumed to be approximately 15.0 kcfs) in order to target elevation 2439 feet at the end of August. Based on flow rates per unit at this elevation, Libby is capable of passing approximately 5 kcfs per unit through 3 units, so 15 kcfs would be the maximum Libby outflow for three units, Reese said. Montana will notify TMT if it intends to elevate either Libby or Hungry Horse operations to IT.

6. McNary Transport

Transport begins at McNary when conditions are no longer springlike, defined as water temperatures of approximately 62 degrees or higher, and flows of 220 kcfs or less, Dan Feil (COE) said. Yesterday was the first day of over 62 degrees at McNary, and flows were in the 320-350 kcfs range last week. The latest STP run indicates flows will drop to 220 kcfs around July 20. This year, unlike last year, the TSWs can be shut off for barge loading operations, thanks to installation of a gate hoist. Meanwhile, the subyearling run is peaking at McNary and will probably taper off in the next few weeks. TMT will revisit this issue at its next meeting July 16.

7. Emergency Protocols

Tony Norris presented the latest iteration of BPA's emergency protocols and generation action plan, both linked to today's agenda. For the past couple of years, the Action Agencies have been revising the emergency protocols so that the document is more concise and meets the goals of fish protection measures. The protocols specify who will do what in the region, and what the follow-up will be in the event of a power emergency. Where previously some actions were embedded into the protocol itself, BPA has separated these into action plans, of which the generation action plan is one. Tony Norris also presented an updated Generation Emergency Action Plan that includes the latest input from the Salmon Managers regarding the list of Emergency Actions.

The Emergency protocols had only been posted for a day or so and therefore will be set to be approved at the next TMT meeting July 16th. Since the Salmon Managers had seen the changes to the Generation Action Plan, NOAA, COR, BOR, Montana, Oregon, Idaho and USFWS were all able to give their approval today of the generation action plan which is considered a living document, and the Salmon Managers can revise at any time the order in which emergency actions would be taken, Norris emphasized. CRITFC will review the two documents and respond at the next TMT meeting July 16.

8. Operations Review

a. Reservoirs. Grand Coulee is at elevation 1,285.1 feet, targeting a refill elevation of 1,290 feet between July 7-14.

Hungry Horse is at elevation 3,557.4 feet. Outflows of 9 kcfs were increased this morning to 11.4 kcfs, or nearly full powerhouse. Refill will probably occur next week.

Libby is at elevation 2,440.5 feet and filling, with inflows of 35.3 kcfs and outflows of 17 kcfs.

Albeni Falls is at elevation 2,061.7 feet at the Hope gage, with 57.7 kcfs inflows and 57.8 kcfs outflows – in other words, passing inflows.

Dworshak is at elevation 1,599.2 feet, nearly full. Outflows are 15.8 kcfs.

Inflows at Lower Granite are 105 kcfs, up by about 4-5 kcfs in recent days. Inflows at McNary are 327 kcfs. Inflows at Bonneville are 314 kcfs.

b. Fish. The sockeye count is at 195,000 and climbing, with 210,000 forecasted and the forecast keeps going up, Wagner said. The summer Chinook count was 59,000, a relatively strong run with a high jack count. Yearlings are nearing the end of their migration, with less than 1,000 fish at most locations. Subyearling migration is currently in progress. Passage efficiency at Lower Granite has been high with the recent spill levels. The passage index at Granite hit 27,000, while further downstream at Little Goose, the count was only 347. The disparity reflects fish passing undetected during periods of high spill. Subyearling passage peaked at McNary at 141,000 fish on June 26. Steelhead passage is nearly done.

c. Power System. There was nothing to report at today's meeting.

d. Water Quality. Water temperatures are below normal for this time of year, Adams reported. There have been a number of TDG exceedances since May 15, continuing through June. In the Snake River, TDG levels peaked at 132.8% at the Lower Granite tailwater when flows were high and units 1 and 2 were out of service. Currently, Lower Monumental, Ice Harbor, McNary, John Day, The Dalles, and projects throughout the mid Columbia have experienced TDG levels above 115%, at forebay monitors. Now that flows are beginning to recede, TDG levels have been coming down. Wagner checked GBT sampling results on the Fish Passage Center webpage and found they have not been noteworthy during the recent high flows.

9. Other

Replacement of hydrophones in the Bonneville forebay failed recently when the researchers' boat capsized, Dan Feil recalled. The hydrophones were successfully installed last week, making it possible now to gather information on fish behavior at the B2 corner collector.

John Roache gave a quick update on flow augmentation in the upper Snake River. The prospect is 487 kaf, and BOR began releasing flows yesterday to reach that goal. More detail on this will be available at the next TMT meeting.

15. Next Meeting

The next regularly scheduled TMT meeting will be July 16 at the COE's Portland offices, with Dworshak operations, Libby and Hungry Horse operations, McNary transport, BPA's emergency protocols and generation action plan, and the usual operations review on the agenda. The following TMT meeting on July 30 will be held at NOAA's Portland offices. This summary prepared by consultant and writer Pat Vivian.

<i>Name</i>	<i>Affiliation</i>
John Roache	BOR
Rick Kruger	Oregon
Jim Litchfield	Montana
Paul Wagner	NOAA
Jim Adams	COE
Dave Wills	USFWS
Tony Norris	BPA
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Scott Boyd	COE
Dan Feil	COE
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