

COLUMBIA RIVER REGIONAL FORUM

TECHNICAL MANAGEMENT TEAM

June 18, 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 5/21, 5/28 and 6/4 meeting minutes and facilitator notes had been posted to the web; no further changes were made during the meeting and they were considered final. The 6/6/ and 6/11 official meeting minutes and facilitator notes had not yet been posted to the web; TMT will look to finalize them at the 7/2 face-to-face meeting.

2008 Summer Treaty Fishing

Kyle Dittmer, CRITFC, reported on SOR 2008-C2, posted as a link to the TMT agenda. The request was for stable 1' elevation constraints for The Dalles, John Day, and Bonneville pools; Dittmer said that the duration of summer treaty fishing will be determined at upcoming tribal meetings and that CRITFC would inform their federal partners of the dates as soon as they are known. Dittmer added that net flight surveys will be occurring during the treaty fishing timeframe. The COE acknowledged the request in the SOR and clarified that Bonneville lower pool elevation of the past weekend was due to clean up of a kite boarder area at Hood River. After discussing the request with CRITFC, the COE planned to operate Bonneville under a 1.5' hard /1' soft constraint, The Dalles under a 1.5' soft constraint with a priority for 1900 to 1700 hours, and John Day under a 1.5' hard constraint. The COE asked that CRITFC notify them as to the dates that are planned for platform fishing.

Action/Next Steps: The COE will share their teletype regarding treaty fishing with CRITFC. CRITFC will inform the COE of the expected dates for platform fishing and for the duration of the summer treaty fishing season. CRITFC gave TMT members a head's up that there will likely be an SOR sent to them by 6/26 for future Treaty fisheries.

McNary TSW Hoist Installation

Jim Adams, COE reported on the McNary TSW gate hoist installation that took place during the week of 6/9. Work was completed by 6/12, as discussed during the 6/11 TMT call. Adams clarified that the duration of the outage in gates 4, 5, and 6 was for 2 hours 45 minutes; that gates 19 and 20 did not require an outage, and that all gates had been enabled for transportation operations. The COE acknowledged project operator Roger Golladay for his work and NOAA commended the COE on a job well done.

Bonneville Screen Update

Dan Feil, COE, reported that screens had been placed in Bonneville units 12 and 14, with additional screens expected to be placed in units 13 and 16 later in the day on 6/18. Feil added that units 11 and 15 were temporarily out of service and expected to be back online on 6/19.

Action/Next Steps: The COE will closely monitor debris collection at the project and will inform TMT members when units 11 and 15 are back online, either via email or posting a link to today's TMT agenda.

Dworshak Operations/Temperature Modeling

Steve Hall, COE, reported on the current status and near-term operations for Dworshak: the project has outflows of 15 kcfs and is at elevation 1585.8' (about 15' feet from full pool.) The COE plan for the near term is to operate Dworshak outflows at 12 kcfs through the weekend, with adjustments made as needed to ensure that spill operations that might result in gas cap exceedances (passing inflows above 15 kcfs) don't occur and to prepare for the transition to summer operations after the July 4th weekend. Hall referred TMT members to ESP graphs linked to the TMT agenda and said that the latest data indicated a 100% chance of achieving refill by 7/1, assuming inflows stayed at or below 14 kcfs. The COE indicated that if inflows are over 14 kcfs, the elevation may be held below full pool a few days longer. Hall noted that it was uncertain when and how the 40" of snow pack will run-off; a snow flight survey scheduled for 6/24 will provide more information on the snow pack in the basin and will be sent to TMT members for consideration. The BOR expressed support for the short-term plan as outlined by the COE and noted the balance of multiple uses for flows and the cooler than historically average weather and in-river temperatures expected at the project over the next few days.

Dave Statler, Nez Perce Tribe, asked whether it might be more prudent to move to an elevation of 1600' (full pool) earlier than currently scheduled, to prepare for the temperature control needs of summer operations. The COE clarified that there is less risk of gas cap exceedances with the short term operation outlined above and that they are required to manage to these caps. Paul Wagner, NOAA, said he was glad to hear that the fisheries' objective of passing "good" inflows early in July and avoiding a double peak was shared by the COE.

Jim Adams, COE, reported on temperature data posted as a link to the TMT agenda. He noted the lower than average thermocline and said that Dworshak outflow temperatures were near 46°F; Dave Wills, USFWS, clarified that temperatures in the range of 46-48° were good from the Dworshak Hatchery's perspective, as opposed to temperatures lower than 45°F. Tracy Schwartz, COE, reported on CEQUAL modeling results, noting that he did not expect to see temperatures rise above 65°F this season, staying well below the 68°F criteria for the Lower Granite tailrace. Kyle Dittmer, CRITFC, reported on temperature modeling results from EPA's RBM 10 model, posted as a link to the TMT

agenda; he noted the similarities to the COE modeling results and said that conditions are favorable for Dworshak summer operations.

Action/ Next Steps:

- The COE will operate Dworshak with outflows at 12 kcfs through the weekend, with adjustments made as needed to protect against gas cap exceedances.
- The COE will provide an update on Dworshak conditions for TMT members via email on 6/25.
- The COE will share results from the snow flight survey with TMT members via email, likely on 6/25.
- Dworshak operations will be on the agenda for the 7/2 TMT meeting. TMT members may convene a conference call prior to that meeting.
- Dave Wills, USFWS, planned to touch base with the Dworshak Hatchery prior to the 7/2 TMT meeting.

Libby Sturgeon Flows/ Libby & Hungry Horse Summer Operations

Amy Reese, COE, reported on operations for Libby sturgeon flows: the project will ramp down to four units (approximately 20.8 kcfs) on 6/20 and hold until 6/28, when the 1.04 MAF sturgeon volume is expected to be exhausted. She referred TMT to operation scenarios posted as links to the agenda based on last week's ESP runs that showed traces for achieving an elevation of 2439' by the end of August and 2449' by the end of September. Assuming a 6.0 MAF volume, Reese said that scenario 1 showed flows of 17.0 kcfs would be needed to maintain steady flows through the end of August. She added that if the median volume of 5.5 MAF were assumed, flows of about 13.5 kcfs would be needed to maintain steady flows through the end of August. Scenario 2 showed reaching 2449' by the end of September would require flows of around 10 kcfs. John Roache, BOR, referred TMT to Hungry Horse scenarios linked to the TMT agenda; he reported that Hungry Horse had inflows currently around 16 kcfs and expected inflows to increase to around 18-19 kcfs. The scenarios showed traces for achieving an elevation of 3540' by the end of August and 3550' by the end of September.

Montana representatives Brian Marotz and Jim Litchfield noted their support for an operation with as stable flows as possible through September and referred to language in the 2008 BiOp to draft Libby to 10' from full by the end of September. Litchfield noted that MT is open to discussions if a compromise on Libby operations could be reached amongst TMT members. NOAA shared similar support for a compromise operation. Rick Kruger, OR, acknowledged MT's proposal and reported that Oregon is not in a position to support any operation that would sacrifice velocities in the Lower Columbia River. There were discrepancies and clarity was needed on various interpretations of court orders, the Fish Operations Plan and 2004 BiOp concerning this particular operation. Facilitator Robin Gumpert acknowledged the policy considerations and court process overlay that has challenged a technical discussion of this issue, and it was suggested that TMT members engage their agencies in seeking clarity on what their

interpretations and intentions are for this year's summer operations for Libby and Hungry Horse.

Action/ Next Steps:

- The COE planned to operate Libby at 17 kcfs following the end of sturgeon flows and leading into the next TMT discussion, on 7/2.
- MT planned to draft an SOR for Libby/Hungry Horse summer operations and flow reduction. MT planned to coordinate with the COE and the BOR and any other interested TMT members on possible scenarios for Libby/Hungry Horse that will be part of the SOR.
- All will bring clarity from their various agencies on their interpretations of the various guidance documents and processes on this operation this year (including the 2004 BiOp), to aid in the discussion.
- It was acknowledged that Oregon's position will very likely not change on this issue.
- NOTE: The COE reported on a potential for a one-unit outage at Libby for the month of August. This aspect will need to be included in further discussions concerning Libby summer operations.

Grand Coulee Operations:

John Roache, BOR, reported on the BOR plan to provide beach access over the July 4th weekend; the project is tentatively scheduled to achieve refill elevation of 1290' elevation by 7/14. There were no objections to the proposed operation from TMT members. Scenarios showed a draft would begin after achieving refill, with McNary flows forecasted to be near 200 kcfs at that time.

TMT Guidelines

Due to time constraints, TMT members deferred discussion of this item to the 7/2 meeting.

Operations Review

Reservoirs: Grand Coulee was operating at 1283.4'. Hungry Horse was at 3546.1' with outflows of 7 kcfs. Libby was operating at 2432.6', with inflows of 30.2 kcfs and outflows of 26.2 kcfs. Dworshak was at 1585.8' with inflows of 23.2 kcfs and outflows of 14.8 kcfs. Albeni Falls was at 2059.8', with inflows and outflows near 82 kcfs. Seven day average flows at McNary were 352 kcfs, Lower Granite flows were 122 kcfs and Bonneville average flows were 363 kcfs.

Fish: Paul Wagner, NOAA, reported that adult passage numbers were a couple thousand per day for summer Chinook. Jack and Sockeye counts were very strong, steelhead and yearling spring Chinook counts are winding down, and Fall Chinook are on the upswing.

Power System: Cathy Hlebechuk, COE reported that a ramp rate exceedances at Libby and Hungry Horse on June 14 was due to a four-minute line trip.

Water Quality: Jim Adams, COE, reported several TDG exceedances due to over-generation. The COE continues to manage TDG as best can. Adams noted upcoming shifts from spring to summer operations at Lower Monumental, Bonneville and Lower Granite.

Priest Rapids Operations

Russell Langshaw, Grant County PUD, reported that rearing protection flows were maintained well this year, with only 3 exceedances for the season.

Action/Next Steps: Langshaw will provide a final Priest Rapids Operations report at the TMT year-end review meeting.

Next TMT Meeting: 7/2 face-to-face

Agenda Items include:

- Finalize notes/minutes
- Dworshak Summer Operations/Temperature Modeling
- Libby Sturgeon Flows Report
- TMT Guidelines – Approve Draft
- Libby/Hungry Horse Summer Operations
- Operations Review

**Columbia River Regional Forum
Technical Management Team Meeting
June 18, 2008**

1. Introduction

Today's TMT meeting was chaired by Jim Adams (COE) and facilitated by Robin Gumpert (DS Consulting) with representatives of COE, USFWS, BOR, BPA, CRITFC, NOAA, Montana, Oregon, Idaho, the Nez Perce Tribe, Spokane 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

Discussion of the meeting minutes was postponed until the next meeting.

3. Priest Rapids Operations Update

The protection program ended on June 17, Russell Langshaw (Grant Co. PUD) reported. He provided TMT with information linked to today's agenda. During the three-week period, protection flows ranged from 158 kcfs to 293 kcfs. The average daily delta during that time was about 60 kcfs. In general it was a great season, with only one major exceedance during the first week of operations. Langshaw will present an annual summary of 2008 operations.

4. 2008 Summer Treaty Fishery – SOR 2008-C2

Kyle Dittmer (CRITFC) presented this SOR for 2-1/2 days of tribal gillnet fishing from Monday, June 23, through 6 pm, Wednesday, June 25. As for all tribal fisheries, the SOR requests a stable elevation within a 1-foot band. CRITFC will conduct net flights over the zone 6 pools to establish locations of fishery nets. The tribes are considering an additional 2-3 weeks of summer fishing and will let their federal partners know as soon as decisions are made.

Paul Wagner (NOAA) asked how frequently updates are provided regarding fishing times. Summer seasons are quite variable, ranging from 1-5 weeks depending on how much of the run is available for harvest. Dittmer asked why the Bonneville pool elevation was low recently. It dropped on Saturday, May 14, because the COE was doing cleanup of the Hood River sand spit, Cathy Hlebechuk (COE) explained.

The COE will provide for the treaty fishery a 1.5-foot hard constraint and a 1-foot soft constraint on Bonneville operations. The Dalles pool will be operated in a 1.5 foot range as a soft constraint with the evening hours from 1900 to 0600

as a priority. Now that flows are high, the COE will do its best to maintain elevations as a soft constraint. The normal operating range for John Day pool is elevation 262.5-264 feet and the COE will continue to operate the project within that 1.5-foot range.

Adams asked whether there are times when the elevation constraints are less crucial to tribal fishers, such as when they are using platforms instead of gillnets. Dittmer said he'll notify the COE when the fishers are using platforms, but that doesn't affect how important elevation constraints are to them.

5. McNary TSW Gate Hoist Installation Update

On Tuesday and Wednesday, June 10-11, as preparation for the installation of the gate hoist, the TSW gates at McNary were set in a fixed position for reasons of worker safety, Adams reported. Gates 4 and 6 were out of service for 2 hours and 45 minutes instead of the 2 hours planned, due to problems with the installation in Gate 5.. Meanwhile, the TSWs never had to be turned off for installation in gates 19 and 20. All gates are functional again, and the TSWs can now be turned off for transportation.

6. Bonneville Screen Update

Over the weekend, flows declined significantly at Bonneville, Dan Feil (COE) reported. On Monday morning, June 16, workers reinstalled the screens in units 12 and 14 at the Bonneville 2nd powerhouse. Today they will install screens in units 13 and 16 and proceed to the north, with the exception of units 11 and 15 which are out of service.

However, this morning flows went back up to nearly 400 kcfs. The COE is monitoring the situation and will keep TMT informed. Dave Wills (USFWS) asked how long unit 11 will be out of service; Fiel said he would find out.

7. Dworshak Operations

A. Current Operations and Conditions. The COE has been running 15 kcfs outflows from Dworshak due to snow covered area criteria, Steve Hall reported. Recent satellite imagery allowed the COE to drop this limitation on outflows. ESP runs this week show outflows going down to 8 kcfs during refill, which may be a low prediction. The COE intends to drop discharges from 15 to 12 kcfs and watch the situation. More than 40 inches of snow above 6,000 feet remains to come as residual runoff. Another RFC forecast showed higher flows, which has the COE concerned, so there may be fluctuations in Dworshak outflows. Going to 12 kcfs outflows is a prudent operation, but that might rise to 15 kcfs again, depending on how the snowmelt comes off. The goal is to fill the Dworshak pool by July 1.

The COE chose 2002 as an analog year to 2008, which maybe up to 25% less in flow volume, Hall said. There is a lot of uncertainty regarding snowmelt and a possibility the snowpack is frozen. Estimated runoff to come is around 3.4 maf, with ESP forecasts showing 3.3 as an average this week. As of yesterday, the COE decided to keep outflows at 14 kcfs or higher. The COE is using all sources of information and watching this situation closely.

Now that we have about 15 feet of storage space at Dworshak to work with, it seems more prudent to get closer to refill at this time, Dave Statler (NPT) said. He recommended backing off now to full powerhouse capacity. If the reservoir doesn't fill now, it could mean having to choose later between providing water for cooling and reaching the refill target.

The COE goal is to fill the reservoir by July 1 as long as there is low risk of exceeding the 110% TDG state criteria, Hall replied. The 15 feet of storage space in Dworshak now could vanish quickly if inflows rise. The COE believes, based on modeling done to date, that ESP forecasts don't capture this risk adequately. Currently the pool is rising by about a foot of elevation per day, and pool elevation will rise as outflows are cut. Cutting back to 10 kcfs out could fill the reservoir by June 28, but that would mean passing inflows of 17-20 kcfs which would be way above the gas cap. The COE recognizes the desire to pass good inflows in the first week of July and intends to do so as long as that doesn't result in TDG exceedances later due to lack of storage capacity.

John Roache (BOR) seconded Hall's concerns with regard to ESP predictions of Hungry Horse Dam inflows. Roache expressed a similar belief that reservoir elevations would rise faster than predicted. Paul Wagner (NOAA) supported the goal of filling the reservoir and passing inflows to the extent possible during summer. The overall fisheries goal is to pass as much inflow as possible during the summertime instead of refilling the reservoir too quickly, thus diminishing the potential volume that could be stored later in the season.

Jim Adams presented Dworshak temperature string data, which shows a sharp thermocline and not much flexibility in terms of Dworshak outflow temperatures at this time. No drastic increase in temperatures due to weather is predicted. Dworshak reservoir is significantly cooler than this time last year, as is Lower Granite. Outflow temperatures are around 46 degrees F, and TDG levels are under the 110% state criteria. No sharp increases in air temperature are expected. The hatchery probably prefers outflow temperatures of around 46-47 degrees F, Dave Wills (USFWS) said. He will check with them to confirm.

For now through July 1, the COE will institute the following operation of Dworshak reservoir: Outflows will drop to 12 kcfs some time between now and this coming weekend, and will continue at 12 kcfs through the weekend. The COE will track inflow volumes and raise outflows up or down accordingly. The target elevation for Dworshak pool is 1,600 feet, or full, on July 1. At the next

TMT meeting on July 2, the COE will share new information, including data regarding its snow cover investigation.

B. Dworshak Summer Operations. The COE presented CEQUAL modeling regarding current conditions and outflow temperatures at Dworshak. Tracy Schwartz (COE) explained the assumptions that went into the model. According to observed data through June 16, the COE used 1975 inflows to set up a release schedule for Dworshak based on 1975 inflows because those year's volumes tend to match 2008 volumes well. The model predicts full pool around July 4, with outflows of 15 kcfs dropping down to 10 kcfs later in July for the sake of refill. Then the goal will be to move the reservoir from full pool down to a target elevation of 1,535 feet by August 1.

The model shows temperatures through June 16 for Anatone, Orofino and Lower Granite outflows. In forecasting for the Anatone and Orofino gages, the COE used 2002 temperatures and releases. The model indicates that temperatures at Anatone and Orofino gages are likely to jump into the mid-70s F range, but temperatures at Lower Granite tailwater won't exceed 65 degrees F. Based on conditions to date, it appears there will be no problem keeping Lower Granite outflows under the 68 degrees F criteria. Dave Wills asked for a printout of modeled Dworshak outflow temperatures to give hatchery personnel; Adams will post that information to the TMT web site when he receives it.

Kyle Dittmer presented CRITFC's Dworshak summer 2008 scenarios, modeled in conjunction with EPA's RBM 10 model. Dittmer had already given FPAC this information in coordination with the Nez Perce Tribe. The analysis includes two scenarios, the Nez Perce Tribe 2008 Plan and the TMT 2007 Plan.

A hydrometeorology approach was used for both scenarios, based on four surrogate years – in this case 1975, 1976, 1985 and 1989, which all had similar weather patterns to 2008. The weather trend for 2008 looks warm in July, cooling by September. The average volume for the four surrogate years was 2,096 kaf, which is similar to the COE's forecast of 2,081 kaf. Ocean conditions are in a strong PDO negative phase now. This is the coldest spring the Northwest has experienced since 1972. The projection for 2008 is for a very short summer, hot in July but cooling again in August. By contrast the NOAA 90-day forecast shows an above average chance of warmer than normal temperatures in Idaho from July through September.

Both of the CRITFC scenarios assume that Dworshak reservoir is full at elevation 1,600 feet on July 1. Under the Nez Perce scenario, the reservoir drafts to 1,535 feet by August 31, then 1,520 feet by the end of September, according to the recent Dworshak operations agreement between the Action Agencies and the Nez Perce Tribe. The main difference between the two scenarios is in how the water is shaped during July and August. Outflows of 14 kcfs would start 2 weeks earlier under the TMT operation than under the Nez Perce operation. The

reservoir reaches the same elevation under both scenarios. Dittmer recommended that temperatures be watched closely in July under the TMT operation. Favorable conditions this year will probably yield a good operation under either scenario.

There was general consensus among TMT members that the COE proceed with its outlined operation through July 1. Email communication might be needed before the next TMT meeting July 2, but probably not another conference call unless a problem arises. The COE will email TMT its projected operation based on information available.

8. Libby Operations

Amy Reese (COE) presented two scenarios for Libby summer outflows, beginning with the current sturgeon operation. On June 7, Libby went to powerhouse capacity (5 units), as the SOR submitted by USFWS requested for sturgeon flows. The SOR called for 14 days of powerhouse flows. The COE therefore plans to ramp down to 4 units on the evening of June 20 and maintain 4 units, or 20.8 kcfs outflows, until June 28. At that time, the sturgeon volume of approximately 1.04 maf will be expended, and the project will transition to summer operation.

Scenario 1 for the Libby summer operation assumes an end of August elevation of 2,439 feet. Under this scenario, 17 kcfs outflow is needed for a straight line draft from the end of sturgeon flows until the end of August elevation. The peak elevation of the pool is 2,450 feet in late July. The inflows in this scenario have a 6.0 maf inflow volume for the April – August period, which is halfway between the median ESP forecast of 5.5 maf and the COE forecast of 6.5 maf. Paul Wagner asked what outflows would be with 5.5 maf inflow volume. The median outflow from all ESP traces for the summer flow is about 13.5 kcfs under scenario 1, Reese said.

Scenario 2 for the Libby summer operation assumes an end of September elevation of 2,449 feet, based on the same inflows as in Scenario 1. The difference in the two operations is a summer outflow of 10 kcfs needed under Scenario 2 to achieve the end of September elevation of 2,449 feet. There was discussion of whether ESP might be underestimating inflows in Libby basin as well as Dworshak; Reese believed that was true and for that reason used a trace with a volume higher than the median trace.

Brian Marotz (Montana) addressed the biology related to scenario 1. Because flows would remain at 17 kcfs in the Kootenai River, resident fish production in Montana would be lost when flows subsequently plummet on September 1. At 9 kcfs outflows from Libby, all riffle habitat is covered. Under scenario 1, the opportunity to keep water close to the shoreline vegetation would

be lost, which is vital for summer production of zooplankton and aquatic insects in the reservoir.

Scenario 2, on the other hand, provides relatively flat flows of 10 kcfs, and biological production is best when flows are stable or gradually declining, Marotz said.. The biological outcome in the reservoir and river is far better under scenario 2. Scenario 2 represents full implementation of the BiOp as Montana understands it, as well as the best available science for both resident and anadromous fish.

The discussion then moved to Libby summer operations in light of uncertainties this year regarding the BiOp and the court-mandated operation.

Montana proposed a compromise between the two scenarios, drafting the reservoirs more for anadromous flows in June and July when fall Chinook are more actively migrating. Then the operation would ramp down and establish a more stable flow in August and September for resident fish. Montana supported the COE's starting plan of ramping Libby outflows down to 17 kcfs, with further rampdowns in August. Montana expressed a willingness to be flexible on this issue and asked others to do the same. Finding a compromise plan that would benefit both resident and anadromous fish will mean setting aside the requirement for a 20-foot draft by the end of August.

NOAA initiated the 20-foot draft in 1995 for summer flows at Libby as a proposed operation to support downstream flows and that operation became locked-in, Wagner said. In 1995 when Snake River fall Chinook had just been listed, there were only 75 adults returning to the river; now there are thousands, so fish managers are in a position to change this operation. NOAA endorsed Montana's proposal to adopt a compromise this year and hoped others would consider such compromise in light of current policy. **BPA** added a historical perspective that the 20 foot draft was chosen arbitrarily, without hydrological analysis to determine the impact on other operations. **USFWS** asked whether the new BiOp includes summer flow targets at McNary. NOAA said yes, but these flow targets weren't intended to be met every day or every hour. A footnote in the 2000 BiOp says these targets can't be met under most conditions, Montana said.

Oregon is not in a position to consider a compromise operation this year. Oregon would be happy to see Montana get its preferred operation at Libby and Hungry Horse, but not at the expense of velocities in the lower river. There was extended discussion of what the 2007 rollover means in terms of Libby and Hungry Horse. Oregon's position is that the operational plan in effect right now calls for a full 20-foot draft. Oregon indicated that it would object to any SOR that eliminates this requirement, elevating the dispute to IT and regional executives.

Montana's position is that language in the court agreement refers to the 2004 BiOp, which recommended the Montana plan as an experiment, and also

the 20-foot draft. This means fish managers have the flexibility to implement the BiOp with a compromise operation that addresses both recommendations. Montana proposed 17 kcfs outflows, as identified in the COE's model runs when sturgeon flows end, then a ramp down to 12 kcfs in August and 10 kcfs in September. There was discussion of the extent to which 2007 operations involved a compromise with Montana that could be rolled over into this year's operations. Montana will prepare a Libby and Hungry Horse SOR based on the compromise proposal presented today, for consideration at the next TMT meeting. Montana asked TMT to work collaboratively on a solution.

BPA requested a starting outflow to use when the sturgeon volume is expended next Friday while TMT continues to work through the process. There was general consensus on Libby outflows of 17 kcfs when the sturgeon volume ends, with an understanding that will change.

There will be a unit outage at Libby from July 28 through August, during which 3 units will be available to provide outflows from Libby, the **COE** said. The COE plans to draft the full 20 feet from Libby and bring the reservoir to elevation 2,439 feet by end August. There was discussion of the legal grounds on which that operation is based. Donna Silverberg suggested further investigation of how much flexibility the COE really has regarding Libby and Hungry Horse operations in light of what the 2004 BiOp says. The planned Libby operation for now is 20.8 kcfs outflows, running 4 units at full load from June 20-28. On June 28 the project will ramp down to 17 kcfs, or 3 units full load. TMT will revisit this issue July 2. *{Supplemental Notation: During August, there will be a unit outage. During this outage, the project prefers to operate using only 3 units. However, the 4th unit can be used if necessary.}*

9. Hungry Horse Operations

John Roache (BOR) presented two scenarios based on current inflows. Scenario 1 drafts Hungry Horse reservoir to elevation 3,520 feet by end August, Scenario 2 drafts to elevation 3,550 feet by end September. Hungry Horse is releasing 7 kcfs now and is approximately 14 feet from full. Roache echoed the COE's sense that inflow volumes could be larger than predicted by the ESP forecasts. For example, inflows from Horse rose from 10 kcfs last weekend to 16 kcfs today. Full powerhouse at Horse is estimated at around 11.5 kcfs at the current reservoir elevation. Roache estimated the reservoir will probably fill in the first week of July.

Scenario 1 assumes a 20 foot draft of Hungry Horse, with 6.5 kcfs summer flows that ramp down to minimum flows of around 1.5-2 kcfs around the end of August or early September. Scenario 2 assumes a 10 foot draft, with a flat flow of 2.8 kcfs to hit elevation 3,550 feet by end September. The difference between the scenarios amounts to 3-4 kcfs outflows, which will change if inflows drop. Litchfield asked for the assumed volume runoff. For the June/July forecast

it was 1,200 kaf, or 125% of normal. Roache said. Wills asked, in either of these scenarios, are projected flows into September sufficient to provide Columbia Falls minimums? Yes, required flows for Columbia Falls minimums are projected to be around 1.5-2.2 kcfs by September, Roache replied.

The same biological principle applies here as at Libby, Marotz said, noting a striking elevation difference between scenarios 1 and 2. The fluctuations involved in Scenario 1 are not beneficial to biology, he said. Scenario 2 drafts to elevation 3,550 feet and keeps the shoreline wetted for a much longer period, which is excellent for reservoir productivity. TMT will revisit this issue July 2.

10. Grand Coulee Operations

BOR's proposed operation this summer is to refill Grand Coulee after the July 4th weekend, reaching elevation 1,290 feet sometime on or before July 14, Roache said. The purpose of this operation is to provide beach access for recreation over the July 4th weekend while also being committed to refilling to 1290 feet by July 14th in order to provide summer flow augmentation. Delaying refill to elevation 1290 feet until after the July 4th weekend will reshape some of the flows from the second week of July into late July and August. Flows at McNary are projected to be more than 220 kcfs through the first half of July under any refill scenario, Roache said. There were no objections to BOR's proposed operation.

11. TMT Guidelines

This topic was postponed until the July 2 meeting.

12. Operations Review

a. Reservoirs. Grand Coulee is at elevation 1,283.4 feet and filling. Hungry Horse is at elevation 3,546 feet, discharging 7 kcfs. BOR is watching inflows daily.

Libby is at elevation 2,432.6 feet, with inflows of 30.2 kcfs and outflows of 26.2 kcfs.

Albeni Falls is at elevation 2,059 feet at the Hope gage. The project is passing inflows of 82 kcfs.

Dworshak is at elevation 1,585.8 feet, with inflows of 23.2 kcfs and outflows of 14.8 kcfs.

The 7-day average for inflows at Lower Granite is 122 kcfs. The 7-day average for inflows at McNary is 352 kcfs. The 7-day average for inflows at Bonneville is 363 kcfs. Flows are still running on the high side.

b. Fish. This is summer Chinook season, with a couple thousand adults passing per day, Wagner said. Jack spring Chinook counts are very strong, which is a good sign for next year. Ocean conditions this year are excellent, better than last year. The sockeye run is strong this year as well. Passage forecasts for the Snake River are higher than seen in recent years. Juvenile migration is winding down for spring Chinook and steelhead, while fall Chinook migration is increasing.

c. Power System. BPA had nothing to report at today's meeting. There was a 4-minute line trip at Hungry Horse and Libby, during which the BiOp ramp rates provided in the emergency were temporarily exceeded.

d. Water Quality. There have been a number of TDG exceedances on the system due to overcapacity flows and some overgeneration flows. Lower Granite tailwater gage has registered exceedances in most days of June. Maintenance work caused a spill increase at Lower Granite, resulting in TDG levels in the 124% range. Lower Monumental and Ice Harbor forebay gages have registered a number of exceedances lately, caused in part by gas generated at Lower Granite. Bonneville spill levels are well over 100 kcfs. The COE reminded everyone that spring is almost over, and a number of project operations will shift beginning June 21, most notably at Lower Monumental, Lower Granite and Bonneville dams. The alternating 40%/60% spill regime for research begins June 19 at McNary.

14. McNary Spill Bay Outage

This planned outage ran from 9 am until shortly after 11 am today, Dan Feil reported. The inoperable acoustic hydrophone was repaired and alternating spill treatments of 40% and 60% spill for summer will begin soon. The COE sent TMT members an email regarding this outage on June 17th.

15. Next Meeting

The next regularly scheduled TMT meeting will be July 2, with Dworshak operations, Libby and Hungry Horse operations, review of meeting minutes, the TMT guidelines, and the usual operations review on the agenda. This summary prepared by consultant and writer Pat Vivian.

Name	Affiliation
Jim Adams	COE
Jim Litchfield	Montana
Rick Kruger	Oregon
Dave Wills	USFWS
John Roache	BOR
Cathy Hlebechuk	COE

Tina Lundell	COE
Holli Krebs	JP Morgan
Tim Heizenrader	Centaurus
Dan Feil	COE
Bob Buchholz	COE
Shane Scott	PPC
Tony Norris	BPA
Kyle Dittmer	CRITFC
Paul Wagner	NOAA
Robyn MacKay	BPA
Steve Hall	COE

Phone:

Scott Bettin	BPA
Russ Kiefer	Idaho
Dan Spear	BPA
Jason Flory	USFWS
Rudd Turner	COE
Margaret Filardo	FPC
Brian Marotz	Montana
Dave Statler	NPT
XX	Spokane Tribe
Barry Espensen	CBB
Russ George	WMC
Bruce McKay	Consultant
Richelle Beck	DRA
Tom Le	Puget Sound Energy
Michael Jones	PDA
Mike Schneider	CO