

# COLUMBIA RIVER REGIONAL FORUM

## TECHNICAL MANAGEMENT TEAM

June 27, 2007 Meeting

### 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 20<sup>th</sup> TMT facilitator notes had one clarifying edit to the McNary/Bonneville spill section and were finalized. The Meeting Minutes from June 20<sup>th</sup> were not yet posted and will be finalized at the July 11<sup>th</sup> TMT meeting.

**Action:** The COE will post the final version of the 6/20 facilitator notes and the draft Meeting Minutes as soon as possible.

#### **Updated Flow Forecasts**

Cindy Henriksen, COE, referred TMT to several flow forecasts posted to the TMT web page, updated as of 6/26. She noted that Libby inflows had receded, with the ESP forecast now showing 6.8 MAF. Henriksen clarified that the ESP hydrographs read “discharge”, but were actually depicting inflows. Paul Wagner, NOAA, noted that the River Forecast Center’s inflow forecast for Libby was showing 7.5 MAF. Dworshak, Lower Granite and Hungry Horse forecasts were also reviewed, with all projects expected to generally recede. Lower Granite modeling showed a slight increase in July based on augmented flows out of Dworshak. Henriksen characterized the July-August period as one with not a lot of variation in flows expected for Libby, Dworshak of Hungry Horse.

#### **Dworshak Operations**

Cindy Henriksen, COE, reported that Dworshak continued to operate within the top .5' of the reservoir, and said that outflows were at 4.3 kcfs where some hours at night the outflow was reduced to 2.2 kcfs, yesterday’s average outflow was 3.6 kcfs. The project is operating with units releasing water in overshoot mode, with a selector gate elevation of 1465'. Jim Adams, COE, referred TMT to one of several graphs linked to the TMT agenda that showed Dworshak outflows and lower Snake River temperature trends. Lower Granite temperatures were at 65-65.5°F, expected to taper for a few days, then continue trending upward; Anatone flows were at 20 kcfs, Dworshak inflows were ranging between 2-4 kcfs, and Orofino flows were in the range of 6.5-7 kcfs and receding. The COE’s model showed temperatures at Lower Granite potentially reaching 68° F (20° C) some time over the next week.

Mike Schneider, COE, gave a power point presentation linked to the TMT agenda on CEQUAL modeling for the lower Snake. In his presentation, Schneider noted that lower flows result in a longer travel time (5.5 days) and water warming of 1°C as it moves through the Lower Granite pool. He clarified that he used NOAA's seven-day forecast, flows of 4.3 kcfs (unsteady state flow), and that temperatures are measured as water leaves the Lower Granite Dam. Schneider recommended continued updates on short-term forecasts and tracking average inflow temperatures to Lower Granite as triggers for management actions.

In addition, Kyle Dittmer, CRITFC, gave a power point presentation linked to the TMT agenda that used EPA's RBM10 modeling with updated observed conditions. Kyle noted that 2007 Dworshak temperature data were tracking well with data from 1970, '73, '78 and 1988.

The Salmon Managers caucused and discussed a recommendation for Dworshak operations: continue outflows of 4.2-4.3 kcfs until Monday, 7/2, when the Salmon Managers will hold an 11 a.m. conference call to review updated temperature and flow forecasts. Paul Wagner said that the Salmon Managers anticipated a recommendation to shift to 7.5 kcfs on 7/2. Robyn MacKay, BPA, requested at least 1-2 days lead time to implement the operation. A suggestion was made to implement cooler water temperatures out of Dworshak as an interim operation, to allow BPA time to increase flows. Dave Wills responded that from the Hatchery perspective, temperatures below 44°F would not support the hatchery fish.

#### **Action/Next Steps:**

- The COE will operate Dworshak flows in the range of 4.2-4.3 kcfs.
- The Dworshak Board has appointed an ID representative and will hold a conference call on Friday, 6/29 to discuss the plan for utilizing 200 kaf for flow augmentation. Greg Haller, Nez Perce Tribe, will be in touch with NOAA, BPA and the COE to schedule a meeting of the Board.
- The Salmon Managers will hold a conference call on Monday, 7/2 at 11 a.m. and will make a Dworshak recommendation to the Action Agencies immediately following the call.
- The COE will email TMT members to inform them of the Salmon Managers' recommendation for Dworshak operations on 7/2. If there is a recommendation to increase outflows, BPA will do its best to implement the change by Tuesday morning.
- Sampling data used to determine the growth rates of Fall Chinook will be on the agenda as part of Dworshak operations discussions at the 7/11 TMT meeting.

#### **Libby Operations**

Cindy Henriksen, COE, shared the RFC's updated ESP forecasts and operation scenarios for Libby dam. The COE's June final water supply forecast (6.95 MAF) and that of the June 26 RFC ESP (6.88 MAF) were fairly similar. The COE shared a 'default' operation scenario based on language from the 2004 BiOp, which has the project reaching elevation

2439' by August 31 with flat flows ranging from 15.8-18.3 kcfs. ESP inflows showed 2453.5' as the maximum elevation that could be reached by the end of August, which is about 5.5' from full. Cindy noted that the project did not fill with any of the flat flow scenarios. Cindy referred to two 'bookend' scenarios, one with flat flows of 17 kcfs to reach elevation 2439' by August 31, and the other, based on Montana's SOR, showing 15 kcfs flat flows until July 21, then dropping flows to 12 kcfs through September. This modeled operation resulted in elevation 2450' by the end of August and 2442' by the end of September.

Jim Litchfield, Montana, noted that Montana had proposed to revisit operations on July 21 with updated conditions, and given current forecasts, said Montana would not object to maintaining flat 15 kcfs outflows through August followed by a gradual ramp down in September. Montana remained concerned with increasing outflows too high (Jim suggested anything in excess of 16 kcfs might be too high) that could adversely impact Montana's resident fish.

**Libby/Hungry Horse SOR 2007-07:**

Bob Heinith, CRITFC, presented SOR 2007-07 on behalf of CRITFC, ODFW, USFWS and the Nez Perce Tribe. (It was clarified that CRITFC signed on as representative of the four Lower Columbia River Tribes, and that Nez Perce signed on separately as an active participant in the discussions leading up to development of the SOR.) The specifics of the proposal were to use flat flows to get Libby and Hungry Horse pools to 20' from full by August 31. Based on the COE's forecasts, the proposal suggested implementing 17.4 kcfs out of Libby and 4.4 kcfs out of Hungry Horse as soon as possible to meet these objectives. The rationale behind the proposal was to support resident fish in Montana and to meet flow targets at McNary. The signatories to the SOR also supported pursuing non-treaty storage in order to provide additional relief for Montana's resident fish. Bob clarified that this proposal did not recommend going above 17.4 kcfs if Libby did not reach 20' from full by the end of August. It was further clarified that, if the operation were to be implemented by July 1, flat outflows at Libby would be around 17 kcfs. While there was no specific recommendation for September operations, during TMT they deferred to the COE and Montana to determine how to operate Libby and Hungry Horse in September.

*Regarding Libby operations* – Folks discussed the two proposed Libby operations and were not able to reach consensus. Paul Wagner, NOAA, proposed a third option, which was to implement the 2006 operation by going to 17 kcfs now through July and ramping down to 15 kcfs (last year this occurred on July 26) through August 31. Idaho also offered support for all the proposed operations and suggested that the best compromise might be to implement the 2006 operation proposed by NOAA.

*Regarding Hungry Horse operations* – John Roache, BOR, said the current STP/ESP modeling showed that implementing a flat flow between 4.4-4.8 kcfs would get the project to 20' from full by the end of August. The BOR offered that either proposed operation was feasible to implement (4.4 kcfs flat or 4 kcfs flat through August), and that the BOR was willing to implement either operation. Given the latest forecast, NOAA

offered support for operating the project to 4 kcfs. USFWS offered potential support for operating Hungry Horse to 4 kcfs if the two projects could be discussed separately and a compromise could be reached on how to operate Libby. The CRITFC representative needed to check with policy representatives to determine whether this operation would be acceptable.

Given the lack of consensus, several TMT members required policy decision on this issue. The issue was elevated to the IT for resolution.

**ACTION:** The COE and the BOR planned to continue operating Libby and Hungry Horse per current operations – 14.8 kcfs outflows at Libby and 4.1 kcfs outflows at Hungry Horse – through Sunday, July 1. An IT conference call was convened on Friday, June 29 at 1:00 pm to discuss Libby and Hungry Horse operations for July 2 through September.

**UPDATE:** Further discussions during the IT conference call resulted in the COE and BOR planning to implement the BiOp default operation, to reach 20' from full by August 31 at both Libby and Hungry Horse dams. **ACTION:** Given up to date forecasts (as of the IT call), the COE planned to operate Libby at 17.3 kcfs outflows starting Monday morning, July 2, and the BOR planned to operate Hungry Horse at 4.4 kcfs outflows starting Monday morning, July 2. Montana objected to this operation and requested the issue be elevated to the Regional Executives level for decision as soon as possible. NOAA offered to begin coordinating this call for next week.

### **Summer Transport at McNary**

Bernard Klatte, COE, reported that the passage conditions at McNary were no longer 'spring-like' indicating transportation operations should begin. On behalf of the salmon managers, NOAA proposed that a decision to implement transportation at McNary be delayed until information was gathered from the NMFS Science Center on a 2002 study of transported fish at McNary, to inform the best operation given this year's spill operation conditions. The salmon managers planned to have a call on Friday, 6/29, to review the information. The COE did not object, and agreed to a check in on Friday. The COE also noted frustration with the delay in receiving the 2001-'02 data and shared that altering the planned transport operation would affect arrangements with the COE contractor. NOAA and the COE suggested that this item be added to the IT agenda.

**Action/Next Steps:** Salmon Managers will share transport information with the COE as soon as they receive it. The issue will be revisited during the FPAC call Friday morning and at IT during their 1:00 pm call.

**UPDATE:** The salmon managers needed more time to look at the study information and continue technical discussions about transportation at McNary. NOAA proposed delaying start of transportation operations until a follow-up discussion could occur at TMT as soon as July 5. No objection was raised.

### **2007 Summer Treaty Fishing**

Kyle Dittmer, CRITFC, referred TMT to an SOR linked to the TMT agenda, requesting 1' hard constraints for the pools at John Day, Bonneville and The Dalles. A gillnet fishing document was also linked to the TMT agenda. Dittmer noted that the Bonneville pool dropped to nearly 72.5' over the past weekend, causing problems for platform fishers. The COE clarified that the drop did not occur during the requested Treaty fishing period and was necessary for clearing debris for human safety and said that, as in the past, the COE would do its best to hold the Bonneville pool in a 1-½ foot range during the Treaty fishing period.

**Action/Next Steps:** This item will be on the agenda for the 7/11 TMT meeting.

### **Operations Review**

*Reservoirs* –Cindy Henriksen and John Roache reported on reservoirs. Grand Coulee was at elevation 1284.3' and targeting refill after 7/4. Hungry Horse was at elevation 3559.7' with outflows of 4.1 kcfs. Spring season averages were 62 kcfs at Lower Granite, 172 kcfs at Priest Rapids, and 246 kcfs at McNary.

*Fish* – Paul Wagner, NOAA, reported on juvenile and adult fish. Updated passage numbers on the Fish Passage Center website showed McNary numbers increasing due to hatchery releases. Steelhead counts were continuing a downward trend and Wagner noted that Little Goose was the most abundant passage location, with gas bubble trauma levels down to 2.9% at the project. Wagner added that jack counts continued to be strong.

*Power system* – Robyn MacKay, BPA, reported 'non-spring-like' conditions on the Snake River and said that there would be a shift to minimum generation at the 4 projects on the Lower Snake.

*Water quality* – Jim Adams, COE, had no exceedances to report.

### **Next face-to-face TMT meeting: Wednesday, July 11<sup>th</sup>**

Agenda items will include:

- Review/Finalize Facilitator's Notes and Meeting Minutes
- Updated Flow Forecasts
- Dworshak Operations
- Libby Operations
- Summer 2007 Treaty Fishing
- Operations Review

## **Columbia River Regional Forum Technical Management Team Meeting June 27, 2007**

### **1. Welcome and Introductions**

Today's TMT meeting was chaired by Cindy Henriksen and facilitated by Robin Harkless, with representatives from BOR, USFWS, COE, BPA, Montana,

NOAA, CRITFC, Idaho, 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**

A change has already been made to page 3 of the facilitator's notes for the June 20 meeting, Bernard Klatte (COE) said. The change involved clarifying actions to be taken regarding spill at Bonneville and McNary. The official minutes from that meeting will be posted within the next day or so.

## **3. Updated Flow Forecasts**

Last week the COE's forecast of Libby water supply for April-August was 7.1 maf, Cindy Henriksen said. That inflow forecast has been revised down to 6.8 maf, which is commensurate with the National Weather Service's ESP water supply forecast for the same period.

The Libby ESP hydrograph shows that inflows are in recession. Not much flexibility can be expected at Libby in July and August. Dworshak hydrographs demonstrate a general recession in July and August with some historic rainfall. The outlook for Hungry Horse is very similar. A historic rain even could cause some rises in inflows, but not in excess of powerhouse capacity.

Lower Granite flows are showing recession for the remainder of June. An increase in early July outflows was based on modeling assumptions that outflows would increase July 5 to provide flow augmentation to Dworshak. The water supply forecasts show that flows at Lower Granite this year will be 69% of average.

## **4. Dworshak Operations**

Dworshak continues to be full, operating within the top ½ foot and releasing outflows of about 43 kcfs, Henriksen said. Inflows are receding rapidly.

Jim Adams showed TMT a graph of tailwater temperatures at the four lower Snake projects. Temperatures at Lower Granite have taken a strong upturn in response to a hot spell several days ago, then tapered off. As of June 26, the water temperature at Lower Granite was around 65 degrees F and trending upward.

Inflow temperatures are generally on the rise, with a small dip at the Anatone and Orofino gages reflecting cooler weather in the past 3 to 4 days, Adams said. Inflows passing the Anatone gage are around 20 kcfs; Dworshak outflows are 2 to 4 kcfs; Orofino flow is 6.5 to 7 kcfs and receding. Dworshak

temperature data indicate there's plenty of cool water available for flow augmentation during temperature control operations, Adams said. Dworshak is presently in overshot mode with the top of the gate at elevation 1,465 feet.

Mike Schneider gave a presentation on CEQUAL modeling of Dworshak temperatures, which assumes Dworshak is at full pool and passing inflows through the July 4 weekend. Currently, releases from Lower Granite are 18.5 degrees C, while temperatures in the forebay range from 16 to 19.5 degrees C. There's a tendency for warmer temperatures to arrive earlier each year, looking at the last 10 years of data. Because flows are so low this year, travel time through the reservoirs is about 5 ½ days. Schneider emphasized the importance of looking upstream at thermal loadings and making informed decisions before temperatures exceed 20 degrees C.

On the other hand, lower flows will help maintain cooler temperatures due to the larger proportion of cold water from Dworshak in the water supply. The model simulation predicted that temperatures would level off in several days, then begin to increase slowly over the 4<sup>th</sup> of July weekend, approaching 20 degrees C on July 5.

These model runs will continue to be updated based on short term weather forecasts, Schneider said. The COE will continue to track inflow temperatures as a way to identify when the water temperature is in the cautionary zone of 18.5 degrees C, or 65 degrees F, which implies warmer temperatures will be arriving soon downriver. Based on this model and forecast, with Dworshak outflows between 2 and 4 kcfs, the lower Snake will stay under the 68 degree criteria until July 5 or 6, Adams said. Dworshak reservoir is currently at 18 degrees C.

Kyle Dittmer presented the updated results of RBM-10 modeling from 4 surrogate years to predict flows this year on the lower Snake. The approach appears to be tracking well, in fact, the best of all years this effort has been made. According to the modeling, Dworshak will soon be passing inflows, with temperatures approaching 20 degrees C. It looks like things will start heating up next week.

The Salmon Managers who were available caucused to discuss next steps in light of the new information. Idaho, Nez Perce, USFWS, Montana, CRITFC and NOAA representatives participated in the decision to recommend an increase to 4.4 kcfs outflows as soon as possible, using the big unit or two small units. The Salmon Managers foresaw a possibility of requesting an increase to 7.5 kcfs outflows using the big and small unit after Monday, July 2, when there's an FPAC conference call at 11 a.m.

Robyn MacKay (BPA) requested lead time on any requests for flow increases so BPA will be able to market the megawatts effectively. Jim Adams

(COE) suggested the Salmon Managers consider that any action they take on Monday include first lowering temperature outflows from 45 degrees F to 42 or 43 degrees F for two days, which would allow BPA adequate lead time to deal with the increased generation.

Sooner would be better, Wagner said. We think there's more than a 50% chance we'll need to start increasing cooler outflows on Monday to avoid exceeding the temperature criteria for listed fish, Kiefer said. Henriksen asked, are you thinking of asking for an increase on Monday? The Salmon Managers haven't reached consensus on that, Greg Haller said. Henriksen said she would arrange for communication to happen between COE and BPA over the weekend if any criteria are met that would trigger a request for a sudden increase in flows. If the Salmon Managers ask for an increase on Monday, BPA will make its best efforts to increase flows and generation on Tuesday morning, MacKay said.

### ***5. Libby Operations***

Cindy Henriksen (COE) presented background information on Libby: ESP volumes, the inflow forecast, and "bookend" scenarios. The early bird forecast was 7.5 maf for April-August; the River Forecast Center's water supply forecast for the same period is 6.8 maf, which is very similar to the COE's forecast. Modeling of ESP forecasting inflows shows that if outflows are increased on July 1 with steady outflows to meet elevation 2,439 feet by end August, outflows would have to be 15.8 to 18.3 kcfs. Modeling based on 44 historic weather years showed that generally the average Libby maximum elevation was 2,453.5 feet, or 5 ½ feet from full with flat outflows that reach 2439 feet the end of August. None of the 44 water years would have reached full pool elevation of 2,459 feet at end August with a flat outflow operation.

The first "bookend" scenario for Libby attached to today's agenda shows flat outflows beginning July 1 through Aug. 31, reaching elevation 2439 feet at end August. The other bookend, the Montana proposal, shows that if 14.8 kcfs outflows were continued through July 21, then reduced to 12 kcfs for the remainder of July and August into September, the reservoir would fill to elevation 2,435 feet or about 4 feet from full, then draft to elevation 2,450 feet by end August and elevation 2,442 feet by Sept. 30. Montana would like to see steady 15 kcfs outflows through July and August with a gradual ramp down in September, based on the latest information available, Litchfield said.

### ***6. Libby and Hungry Horse Operations: Montana Proposal (SOR 2007-MT-1) and Alternate Proposal (SOR 2007-07)***

TMT considered two SORs, the Montana proposal that Jim Litchfield had previously presented to TMT in draft form, now finalized, and a new proposal jointly signed by CRITFC, ODFW, the Nez Perce Tribe and USFWS.

At an FPAC meeting yesterday, the signatories to SOR #2007-7 felt it was important to get the full 20 feet of flows out of Libby and Hungry Horse this year, Bob Heineth (CRITFC) reported. So they created SOR #2007-7 in response to the Montana proposal (see above “bookend” scenarios). Because it appears there will be no additional water supply available from non-treaty storage in Canada this year, the signatories have requested outflows be increased to 17 kcfs at Libby in order to get the full 20 feet out by end August. Under this SOR, any additional water from Canada or another source would be retained in Libby reservoir for Montana’s benefit. The tradeoff is, if operations at 17 to 17.4 kcfs outflows end up not drafting the full 20 feet out of the reservoir, outflows would nevertheless remain at 17 to 17.4 kcfs in response to Montana’s request for guaranteed flat flows through summer.

Cindy Henriksen explained that the STP run used in the calculations showed that steady outflows starting July 1 would be 17 kcfs, and steady outflows starting July 5 would be 17.4 kcfs, in order to reach target elevation by end August. The preference would be for starting the higher outflows sooner rather than later, Heineth said.

Litchfield questioned the pursuit of reservoir elevation targets established in the mid-90s in light of the Council’s recent recommendations. He noted that there’s only 2 kcfs difference in the preferred July and August operations. However, SOR 2007-7 apparently makes no provisions for September flows that are critical to resident fish in Montana. Therefore, Montana can’t agree to SOR 2007-7.

Henriksen asked what the signatories of SOR-2007 envisioned for September. Ramp down provisions for September were not included because the signatories assumed those details would be worked out between the COE and Montana, Statler said.

The conversation turned to the likelihood of actually getting the 7.5 maf predicted in the early bird forecast of water supplies this summer. The RFC has acknowledged that early bird forecasts are made with only preliminary sets of data, Henriksen said. BPA could explore the possibility of a July for August water swap with Canada if that would be helpful, MacKay said. That would not be additional water, but the same amount of water shifted in time. Other than such a swap, Canadian water is not going to be an option this year.

Paul Wagner suggested following last year’s operations as a compromise between the two SORs. Last year’s outflows were 17 kcfs until Aug. 1, then 15 kcfs for most of August. The decision becomes a policy call when it comes to small differences like 2 kcfs in outflows, Wagner said, because the impacts of such a small difference on life stage effects of listed fish are extremely difficult to measure.

Henriksen asked for feedback from other TMT members. Idaho would be comfortable with either operation described in the SORs, Russ Kiefer said. BOR estimates that flat flows of 4.4 to 4.8 kcfs would draft 20 feet out of Hungry Horse by the end of August, John Roache said. He noted that the difference between those levels and the 4 kcfs in the Montana proposal is minimal. Flat flows of 4 kcfs through the end of September would put Hungry Horse at elevation 3,535 feet by end September; flat flows of 4.4 kcfs from July 1 through Sept. 30 would put the reservoir at elevation 3,531 feet by end September, an elevation difference of 4 feet.

USFWS could accept the Hungry Horse provisions in the Montana proposal if compromise can be reached on Libby operations, David Wills said. However, the other signatories to SOR 2007-7 were not comfortable with that. COE and BOR representatives both said they could not move to a new operation at either dam until a clear consensus was achieved. There was general agreement that deciding among the three proposed levels of operations is a matter of policy, so TMT referred this decision to an IT conference call at 1 p.m. on Friday, June 29.

### ***7. Start Summer Transport***

In operating documents the COE submitted to the court, it states that transportation will begin when conditions are no longer spring like, meaning flows are less than 220 cfs and temperatures are around 62 degrees F, Bernard Klatter (COE) said. These conditions have been met, so transportation should begin. With regard to the effects of transport on ESA-listed and non listed juvenile fall Chinook, the 2004 BiOp says that "activities will be adaptively managed with consideration to in season migration and research results," Wagner said. The latest available data on this are ocean returns since 2002, when 454 adults returned, their mode of travel unknown. Wagner has asked the Science Center for the latest data by Friday, which FPAC wishes to review before making any recommendations regarding transportation this year. TMT added this item to the agenda for the IT conference call at 1 p.m. Friday.

### ***8. Operation of the Lower Columbia Pools for the Summer 2007 Treaty Fishery (SOR 2007-C2)***

Platform fishers at Bonneville pool have had trouble placing their nets because water levels are so low, Kyle Dittmer (CRITFC) said. It appears that pool elevations dropped to about 72.5 feet at Bonneville over the weekend of June 23 -24, which was lower than the tribes were expecting. Henriksen explained that debris had built up near a sailboarding area, so the COE lowered water levels so the area could be cleared for recreation and human safety.

For the next week, the tribes are requesting that the three lower pools operate within a 1-foot band as a hard system constraint, according to the latest

SOR submitted on June 24, Dittmer said. The COE recognizes the need for a steady pool for the tribal fishery, Henriksen said. Bonneville pool is operating between elevation 75 and 76.5 feet as a hard system constraint. The Dalles typically operates within a 43-foot range, and John Day already has a 1.5-foot limit ranging from elevation 262.5 to 264 feet. Dittmer asked whether these specifications are based on the COE's interpretation of the 1998 Ted Strong agreement; Henriksen said yes.

## **9. Operations Review**

### **A. Reservoirs.**

Grand Coulee is at elevation 1,284.3 feet with a goal of refilling after July 4, Roache said. Hungry Horse is at elevation 3,559 feet, releasing 4.1 kcfs. Lower Granite seasonal average flows were 62 kcfs during the spring season; the flow objective was 85 kcfs, Henriksen said. Priest Rapids flows were 172 kcfs from April 10 to June 30. McNary flows have been about 246 kcfs with a spring flow objective of 247 kcfs.

### **B. Fish.**

The yearling Chinook migration is basically over, Wagner said. The subyearling Chinook migration is still underway, but passage indices are low, and collection with spill appears fairly low. The current numbers are far below anything seen previously on the Snake. Migration is going strong at McNary, which reflects large numbers of Hanford hatchery fish passing.

Steelhead passage is trending downward, with Little Goose as the most abundant location. Jack Chinook returns continue to be strong at about 1,000 fish per day.

Tony Norris asked whether problems with GBT had abated. The latest data found only 3% incidence, so the wave of GBT trauma has passed, Wagner said.

**C. Power.** Flows are dropping rapidly on the Snake, and BPA will be going into low-flow operation, which means there will be times when the projects there must operate to minimum generation requirements, Robyn MacKay (BPA) said. In terms of the 2007 operations agreement, that means we're moving earlier this year than last year into using one unit for generation on the four lower Snake projects and spilling the rest, Henriksen said.

**D. Water Quality.** This is a low flow period with not much spill, and there have been no exceedances, Henriksen said.

## **13. Next TMT Meeting**

The next regularly scheduled TMT meeting will be on Wednesday, July 11 and will include a final report on the Priest Rapids operation. In the meantime, there will be conference calls on July 5 and 9 regarding Libby/Hungry Horse operations and transportation. This meeting summary was prepared by consultant and writer Pat Vivian.

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