Columbia River Regional Forum
Technical Management Team Conference Call
April 29, 2009

1. Introduction

Today's TMT meeting was chaired and facilitated by Jim Adams (COE), with representatives of COE, NOAA, BPA, BOR, CRITFC, Idaho, Montana, Washington 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.

Russ Kiefer has a new email address: russ.kiefer@idfg.idaho.gov.

2. Review Meeting Minutes for April 22, 2009

Discussion of the facilitator's notes and official meeting notes for April 22 was postponed until next week.

3. Dworshak Operations

Steve Hall (COE) presented an analysis of Dworshak operations (Attachment (a) to today's agenda), which shows that the inflow volume forecast has been steadily declining. The current COE inflow forecast at Dworshak is 2.66 maf (2,662 kaf), and the ESP average is 2.4 maf. The Weather Service also predicts that precipitation throughout the basin will be normal or slightly less than normal, with normal or slightly higher than normal temperatures. These forecasts all point to a trend of decreasing inflows. COE estimates of augmentation volumes result in discharges ranging from 2.1 to 7.4 kcfs, with an average of 4.6 kcfs, based on ESP traces.

The COE is therefore very concerned about guaranteeing refill of Dworshak to 1600 feet by about June 30 as specified in the BiOp. Attachment (b) depicts possible results of the operation the Salmon Managers have proposed to date: Hold 15 kcfs discharge through the end of April, and then run full powerhouse, or 10.6 kcfs outflows, from May 1-6. The COE's low estimate shows this operation could leave zero water for augmentation during refill after May 6, so the project would simply be passing minimum flows through the end of refill. The COE's high estimate is about 5.9 kcfs average outflows through the refill period, with a mid-point of 3.2 kcfs.

The purpose of the graphs in Attachments (a) and (b) is to illustrate the possible effects of the proposed operation, Hall said. They depict the difference between the proposed operation and what could have happened if the project had dropped to lesser flows a few days ago. Both sets of graphs are based on

observed data through April 27. The May 1 COE forecast, which will be available by the next time TMT meets May 6, will give a much clearer picture of inflows.

Attachment (a) also depicts projected augmentation volumes if the project maintains 15 kcfs outflows through April 30, then drops to 5.7 kcfs outflows. Another slide depicts the Dworshak inflow forecast. The median inflow barely reaches 20 kcfs and drops off rapidly under the proposed operation.

The message here, Hall emphasized, is that early reservoir refill in 2009 will be essential. Even with outflows of 5.7 kcfs, the median forecast shows the project at minimum outflows through the last half of June. If outflows drop on May 1, there will probably be less than 5 kcfs outflows during the refill period, according to these forecasts. In terms of reservoir volumes, the 25th and 75th percentiles show the reservoir refilling as early as June 20 under the high forecast and close to being full on June 30 under the low forecast, which reaches full sometime during the first week of July.

The COE requested a discussion among the Salmon Managers of the tradeoffs involved in their proposed operation. The Salmon Managers are aware of the inflow situation and discussed it at yesterday's FPAC meeting, Paul Wagner (NOAA) replied. They considered a modified operation that would begin with 7 kcfs outflows and rise to 8 kcfs, but finally decided they still want to maintain 10 kcfs outflows until the next FPAC meeting May 5, when the final May forecast will be available. The reason: April 22 until May 10-15 is prime time fish migration season for the year, a time when augmentation flows are clearly at their most beneficial to fish survival.

Discussion turned to the role of the flood control refill curve (FCRC) in the current situation. The FCRC is based on 95% probability of reservoir refill and was used to set the end of April target of 1,525.4 feet for Dworshak, Steve Hall (COE) explained. Normally, that elevation is considered the lower bound of the Dworshak operation this time of year because any deeper draft would jeopardize refill probability. Continuing the current operation and holding 10 kcfs outflows during the first 5 days of May is projected to put the reservoir elevation at 1,522.8 feet, several feet below the end of April FCRC, a red flag in terms of refill. The original end-of-April flood control target was 1,515 feet elevation until the refill curve intersected the FCRC on April 18th. Once the two curves intersect, the FCRC becomes the ruling curve in terms of reservoir operations.

Hall asked the Salmon Managers whether fully understood that their proposal increased the risk of not refilling Dworshak reservoir by July 1. Cathy Hlebechuk proposed a pass-inflow operation instead of trying to hold flat flows for the first 5-6 days of May. The Salmon Managers have made their recommendation after informed discussion and acknowledge the risks involved, Wagner replied. If inflows drop, the Salmon Managers won't be surprised if Dworshak goes to minimum outflows soon, Russ Kiefer (Idaho) agreed.

Dave Statler (Nez Perce) asked how the 95% probability of refill is calculated. The FCRC is based on the official water supply forecast, and is also based on average inflows for the remainder of the season – for spring 2009, it's based on the 2,662 kaf April-July volume forecast and average inflows forecasted for May and June, Hall replied. The 2009 volume forecast for Dworshak was based on a number of factors, including observed snowpack at several COE official measuring sites, the September 2008 SOI weather forecast which incorporates La Nina trends, and observed Dworshak inflows. It is calculated using the COE's official principal components regression method.

Adopting the Salmon Managers' recommendation would make the probability of refill less than 95%, but the risk of not refilling would still be low, Wagner said.

The COE is indeed confident of refilling by the end of June if the current forecast holds, or if there's even a slight reduction in inflows, Adams said. A significant drop in the forecast, however, could mean not achieving refill. Another factor to consider is that Dworshak basin is prone to sublimation, a phenomenon involving significant loss of snowmelt and runoff due to dry winds and evaporation, Hall added.

The Nez Perce Tribe still considers Dworshak refill an extremely high priority, Statler said. Discussion moved to the 200 kaf Nez Perce operation in September, after Dworshak pool drafts to elevation 1,535 feet at the end of August. The COE's commitment is to a volume draft from 1,535 to 1,520 feet, regardless of whether the refill target of 1,600 feet elevation is met at the end of June, Adams said. If the reservoir doesn't refill, the consequences, although unlikely, would be reduced flows in July and August, which could impact temperature control in the Snake River downstream. TMT members then stated their views of the Dworshak operation:

NOAA – Despite the risk of minimum flows later, it's important to keep Dworshak outflows at 10 kcfs until the May 1 forecast is released and can be discussed at the FPAC and TMT meetings May 5 and 6. Suggested dropping flows to 12.5 kcfs tonight, April 29.

Idaho – There is an established correlation between flows of 70-85 kcfs during this migration period and direct survival benefits. The unusually cool weather and lower-than-normal runoff volume now makes it even more imperative to release flows from Dworshak to support in-river migration. Idaho advocated a flat flow regime over the next two weeks over a pass-inflow operation.

Washington – Supports NOAA's and Idaho's positions.

Montana – Requested a discussion of impacts the Salmon Managers' proposed operation would have on flows at Lower Granite. Daily average inflows at Lower Granite have been dropping steadily for the past 6 days, from 139 to 92.3 kcfs, Adams said. With 10 kcfs outflows, the Lower Granite elevation will be 73.3 feet on May 3, based on the current STP 10-day forecast, Hall said. Montana and the COE agreed that the proposed Dworshak operation will not make a significant difference in flows at Lower Granite.

Nez Perce – Emphasized the importance of peak flows to keeping fish moving. Nez Perce advocated a Dworshak operation that mimics the natural freshet more closely than current flood control procedures allow. A closer focus on the intersection of the refill and FCRC curves during spring spill is warranted. It's important to balance the two objectives, i.e. not create refill problems in the process of addressing flood control risk.

BOR – Deferred to the COE on this decision. The BOR would not object to either operation, i.e. passing inflows or following the Salmon Managers' recommendation.

BPA – Deferred to the COE.

CRITFC – Supported the rationale for 10 kcfs outflows. Agreed with the Nez Perce Tribe that flood control is currently based on an artificial deadline of April 30, and encouraged a more flexible process that incorporates information on new weather patterns which have been changing rapidly.

COE – Higher Dworshak flows now could have potential impacts on refill and temperature augmentation this summer. In response to a suggestion from NOAA, the COE proposed the following operation: reduce outflows to approximately 12 kcfs tonight through the evening of April 30, at which point outflows drop again to full powerhouse, or 10.6 kcfs, through May 5. Then outflows go to approximately 5.5 kcfs, or the single large unit, until TMT meets May 6 and makes further adjustments.

There were no objections to this operation.

4. Transportation Operations

Fish collection at Lower Granite will begin May 1, Dan Feil (COE) reported. The first barge will leave May 2. TMT discussed the schedule for transport at Little Goose and Lower Monumental. The Salmon Managers recommended that transportation start on May 5 at Little Goose, and on May 8 at Lower Monumental.

There were no objections to this operation.

5. Operations Review

a. Reservoirs. Grand Coulee is at elevation 1,259.7 feet, drafting about a foot per day until May 2 or a maximum elevation of 1,257.7 feet, John Roache reported. The latest forecast for the initial controlled flow date is May 12-13. *{Editors note: The ICF date has been determined to be May 8. The project will operate within a range of 1256.7 feet to 1259.7 feet until 2400 hrs on May 5th. Sometime on May 6th, the project will need to be at elevation 1258.2 feet. On May 7th, the project may begin refill}.*

Hungry Horse is at elevation 3,519.49 feet and slowly filling, with 1.0 kcfs outflows until the evening of April 30. Project outflows will increase in two steps, starting the evening of April 30. Outflows will be at 6 kcfs by May 2.

Libby is at elevation 2,405.3 feet, with inflows of 6.3 kcfs and outflows of 4.0 kcfs, Adams reported. Albeni Falls is at elevation 2,055.7 feet, with inflows of 39.8 kcfs and outflows of 37.1 kcfs. Dworshak (discussed at length above) is at elevation 1,526.6 feet, with outflows of 15 kcfs and inflows of 10.3 kcfs.

Seven-day average inflows are 117.5 kcfs at Lower Granite, 278.1 kcfs at McNary, and 296.9 kcfs at Bonneville. There was discussion of operations at Bonneville for the Spring Creek release on May 1. The COE will provide reduced loading of the Bonneville 2nd powerhouse beginning the morning of May 2 and will monitor passage of the hatchery release. That operation will continue until 90-95% of the fish have passed.

Inflows at McNary are projected to reach 173.6 kcfs on May 3 according to the latest STP run, which is apparently 100 kcfs lower than they're running now. There was discussion of this discrepancy. It would be a dramatic draft during prime migration season, Wagner said – a range of 210-220 kcfs outflows is desirable at McNary now. The discrepancy is largely driven by natural conditions, Tony Norris (BPA) said. The COE will double-check the 100 kcfs figure.

b. Fish. This is prime time in terms of juvenile passage numbers, Wagner reported. About 100,000 subyearling Chinook are passing Lower Granite per day, and 25,000 are passing both Little Goose and Bonneville per day. Steelhead passage peaked at 332,000 per day at Lower Granite and 330,000 per day at Little Goose.

In terms of adult passage, approximately 17,000 spring Chinook have passed Bonneville to date, Cindy LeFleur (Washington) reported. There should be many more in the river by now. In 2006, the spring Chinook run didn't peak until May.

c. Power System. There was nothing to report today.

d. Water Quality. Total dissolved gas levels increased due to involuntary spill last week, but flows have since declined and gas levels are under control, Adams reported. Current spill caps are 100 kcfs at Bonneville, 90 kcfs at Ice Harbor (to be increased to 95 kcfs today), 24 kcfs at Lower Monumental, and 20 kcfs at Lower Granite, which is spilling steadily. John Day, The Dalles and Little Goose have been spilling their BiOp-required percentages (40%, 30% and 30%, respectively) without any water quality problems. Wagner expressed approval of the way these spill caps were managed.

Water temperatures are 44 degrees F at the Orofino gage, 39.8 degrees F at Dworshak, 48 degrees F at Lower Granite tailwater, and 49.8 degrees F at Ice Harbor tailwater. On the lower Columbia, average temperatures are 48.1 degrees F (50 degrees F at both Bonneville tailwater and the Camas Washougal gage).

9. Next Meeting

The next regular TMT meeting will be in person on May 6 at the COE Portland office. This summary prepared by consultant and writer Pat Vivian.

Name	***Affiliation***
Jim Adams	COE
Cathy Hlebechuk	COE
Rudd Turner	COE
Tim Heizenrader	Centaurus
Kim Johnson	COE
Bob Diaz	Integral Renewables
Dan Feil	COE
Tony Norris	BPA
Jim Litchfield	Montana
John Roache	BOR
Cindy LeFleur	Washington
Dave Statler	Nez Perce Tribe
Steve Hall	COE Walla Walla
Kyle Charles	JP Morgan
Kyle Dittmer	CRITFC
Barry Espenson	CBB
Russ Kiefer	Idaho
Shane Scott	PPC
Richelle Beck	DRA
Russ George	WMC
Holli Krebs	JP Morgan
Ruth Burris	PGE
Glen Trager	Shell Energy
Paul Wagner	NOAA