

COLUMBIA RIVER REGIONAL FORUM

TECHNICAL MANAGEMENT TEAM

June 24, 2009 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

June 17 facilitator notes/official minutes: TMT members need more time to review. No, so they will look to finalize them during the July 1st conference call.

Merchant Alert Protocol and Power Services Letter to Neighboring Systems

Steve Kearns, BPA, referred TMT to a presentation linked to the agenda. He provided background stemming back to July 24th 2006 (record high temperatures), when some NW utilities could not provide power and an Energy Emergency Alert (EEA) was issued. Kearns reviewed the course of actions taken once the communications problems were identified and noted that one challenge was a difference in interpretation between power and merchant representatives. In October 2006 a merchant communications task force created and then in November 2007 a WECC Business Practice Request was made to draft a formal set of protocols to help facilitate communication between merchants. The Protocols/ Guidelines for purchasing emergency power were completed in February 2009, and they were officially approved in March 2009. Kerns described the 2009 letter from Steve Oliver, BPA, and clarified that "honoring regional and public preferences" means that BPA obligated (contractual and legally) to first save local NW public power needs. Kerns reviewed uses for a merchant alert and BPA's Power Emergency Letter process; coordination with Federal agencies, TMT stakeholders, and the US District Court will occur whenever possible. Merchants are expected to use existing system to source any available energy sources on their own (before turning to BPA). Kyle Dittmer, CRITFC, asked that the tribes be explicitly spelled out as a regional stakeholder, as they have a government-government relationship with the Federal agencies. Tony Norris, BPA, added that this is one of the ways that BPA is honoring fish protection obligations. TMT members discussed how power emergencies can tangibly affect human health/ safely (i.e. power to hospitals and traffic systems).

Action/Next Steps: TMT members noted that should there be any emergencies this year, it would be appropriate to discuss this item at the TMT year-end review.

EPA's RBM 10 Temp Modeling

Kyle Dittmer, CRIFTC, referred TMT to presentation linked to the agenda. He noted Ben Cope, EPA, was on vacation and so Dittmer presented on Cope's behalf. Years 1976 and 1991 are years that had similar conditions to this year (2009). He reviewed NOAA's 90 day forecast data, noting cool temperatures are predicted for the near term but could

take a dramatic turn anytime over of the couple of weeks. He reviewed the expected benefits and anticipated pool elevations for three Libby summer operations scenarios: flat 7 kcfs, flat 10 kcfs (through August 31), and a “Nez Perce Tribe” 2009 scenario, with a gradual ramp up and down July- September. Dittmer showed slides on Lower Snake River/ Brownlee flow data. He showed slides of the three scenarios’ modeled water temperature for 2009 as compared to 1976 and 1991 data. In his conclusions he noted the “Nez Perce” scenario provides most balanced temperature control with a September carry over of approximately 200 KAF.

Russ Kiefer, ID, thanked Kyle for providing this data again this year as it helps TMT consider conditions that may unfold in weeks to come.

Dworshak Operations Update

Steve Hall, COE, referred TMT to a Clearwater River/Lower Snake River temperature reports for June 2009 linked off TMT home page. TMT noted that the COE’s CEQUAL modeling doesn’t get great results when temperatures are below 60 degrees F. Overall, this years water temperatures are somewhat similar to those observed in 2008. He noted there has been 300-400% of normal precipitation on Upper Snake River and high levels of water expected to come down river. Hall reported that Dworshak unit 3 repairs appear to be relatively successful; it is still leaking but within drainage capacity. Unit 3 will be monitored closely. Currently, Dworshak pool is within the top 1 foot of full pool; the project will hold its elevation for the near term and pass inflows as evenly as possible through the July 4th weekend. Hall said that overall the project is in good position to manage actual conditions that may unfold.

Next Steps: This item will be on the agenda for July 1st; COE will present modeling of forecasted temps and a few different operational scenarios for TMT to consider. The COE will also provide data to FPAC or their June 30th meeting. For post July 4th weekend operations, TMT members would like to see scenarios based on actual operations used in ‘07 and ‘08 to see how conditions might play out for 2009. Dave Wills, USFWS, said that the Hatchery would prefer temperatures between 46-49 degrees for optimal fish growth.

Libby Operations Update

Joel Fenolio, COE, referred TMT to slides posted as links to agenda that modeled the regression forecast for April- August 4600 KAF, Libby Dam out flows with flat flow after sturgeon pulse, and modeled Libby Dam elevations with flat flow after sturgeon pulse. Russ Kiefer, ID, asked about justification for increased outflows in early June. A: COE/ BPA said it is due to need to balance flood control risk. TMT members discussed options of going above Bull Trout minimums and Fenolio said the COE could offer an adjustment of extending the sturgeon pulse ramp down over 6 days this year. TMT members present at the meeting provided feedback:

- BOR: no objection.
- BPA: no objection.
- OR: no objection.
- USFWS: no objection.
- NOAA: no objection.
- ID: no objection.

- WA: no objection.
- MT: no objection.
- Also: Kyle Dittmer, CRITFC: no objection.

Next Steps: The COE will provide updates on operations to TMT every two weeks (or more often if requested) as the season progresses.

Little Goose Operations Update

Dan Feil, COE, reported that the spillway weir will shift to the “high crest” (lower flow) position. The transition will take about a day, and Feil clarified that spill levels will not likely be affected.

McNary Operations Update

Dan Feil, COE, reported that hydrophone units went out during bay movement from #16 to #22. Units were shut down- repair/ replaced as needed. Feil clarified that spill will likely stay at 50% during the day. The following TMT members provided input:

- BOR: no objection.
- BPA: no objection.
- OR: no objection.
- USFWS: no objection.
- NOAA: no objection.
- ID: no objection.
- WA: no objection.
- MT: no objection.
- Also: Kyle Dittmer, CRITFC: no objection

John Day Operations Update

The TSW-related bird predation issues observed earlier in the season led to modeling field trip. Group decided 40% spill pattern looked favorable for study conditions. The following TMT members weighed in on the adjustment to 30/40% spill:

- BOR: no objection.
- BPA: no objection.
- OR: no objection.
- USFWS: no objection.
- NOAA: no objection.
- ID: no objection - look forward to seeing study results.
- WA: no objection.
- MT: no objection.
- Also: Kyle Dittmer, CRITFC: no objection

Operations Review

Reservoir: Reservoirs: Grand Coulee was at elevation 1286.8' and filling. Hungry Horse was at 3553.85', with inflows of 8 kcfs and outflows of 2.3 kcfs. Libby was at elevation 2449.4' and Albeni Falls was at elevation 2061.8' and passing inflows. Dworshak was at elevation 1599.8'. Seven day average flows were 98 kcfs at Lower Granite, 259.7 kcfs at McNary and 255 kcfs at Bonneville.

Fish: Paul Wagner referred to FPC website: Summer Chinook 2,000 per day. Sockeye 10,000 per day at Bonneville. Smolt data showed sub yearlings in 13-39,000 per day range, with the recent increase in passage due to hatchery releases. DART data showed sub yearlings tracking above the 10 year average.

Power System: Nothing to report.

Water Quality: TDG low overall. Overall cool temperatures in the lower Columbia River.

Other: The Division COE Team Leader for Regulation Group for the next 120 days will be Karl Kanbergs. Also, Rudd Turner announced his retirement, effective September 3rd-celebration date is TBD. A farewell luncheon for Jim Adams will be held July 2nd Fong Chong 11:30 - Dim Sum Extravaganza!!!

TMT Schedule: Call scheduled July 1 9:00 am (no Face to Face)

July 1st meeting agenda items include:

- Finalize June 24 TMT Minutes and Facilitator Notes
- Continued Temperature Modeling
- Grand Coulee Operations for July 4th
- Operations Review
- SOR Treaty fishing

**Columbia River Regional Forum
Technical Management Team Meeting
June 24, 2009**

1. Introduction

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

2. Review Meeting Minutes for June 17, 2009

There were no comments on these notes because people needed more time for review. They will be finalized at the next TMT meeting July 1.

3. Merchant Alert Protocol Letter

Steve Kerns (BPA) gave TMT a presentation on BPA-led efforts to establish a formal procedure for energy merchants in the region to communicate with each other during impending energy shortages.

The effort began in response to a heat wave on July 24, 2006, when four Energy Emergency Alerts (EEA) were declared in the Northwest. An EEA is a formal announcement to the region that a utility supplying some or all of its generation is unable to meet its load. BPA had previously informed Northwest utilities that there would be no surplus power available that day, and that it would not violate BiOp operations to serve a utility unless an energy alert had been declared. Fortunately, BPA was able to assist utilities that day by selling small amounts of surplus power without violating its BiOp obligations.

The Northwest Power Pool studied the July 24, 2006, situation and found there were actually sufficient resources available in the Northwest at the time to meet the region's loads. However, confusion prevailed in the real-time market regarding the amount of generation available. Most utilities at the time were using serial call lists to contact potential suppliers in the event of a shortage. Communication problems between merchants and balancing authorities also made it difficult to get energy alerts declared. Another lesson learned was that it was possible for a merchant to declare an energy alert without contacting all potential suppliers in the region.

In response to these problems, a task team worked to foster parallel communications using existing technology so merchants could find resources quickly in a crunch. The task team developed a guideline for merchants to use if they wish to broadcast their needs when help is urgently needed. The guideline,

formally approved by WECC in March 2009, is available for use this summer. Utilities now have a mechanism to broadcast their needs to every possible source if they face a shortage in the hot months.

This process dovetails with BPA's annual letter to utilities explaining the procedures BPA will follow in an existing or pending power emergency. Three factors weigh heavily in BPA's decision making during power shortages: (1) protecting human health and safety; (2) maintaining hydro operations for ESA-related purposes; and (3) following BPA's contractual obligations to serve public loads in the Northwest as a priority.

BPA requires Northwest utilities to take a number of steps before it will consider impacting ESA-related operations to meet their load. (1) a merchant alert must be issued. (2) A NERC EEA 2 or 3 must be declared ;(3) Any sales that don't impact human health and safety must be curtailed (e.g. electricity for hospitals and traffic lights); (4) the utility must adjust its ESA operations before asking BPA to do the same; (5) and a public appeal for conservation must be made if time permits.

As always, Kerns emphasized, BPA will coordinate with other federal agencies and TMT stakeholders to the extent possible in power emergencies. BPA's letter to utilities, attached to today's agenda, clarifies that BPA doesn't plan on offering them emergency reserves this summer, thus they need to plan to maintain their own supply.

Evidence has already surfaced that informal merchant alerts can expand the region's power supply in a pending emergency by reaching otherwise unknown sources. Kerns expressed confidence that the new protocol will uncover resources in the Northwest.

Kyle Dittmer (CRITFC) pointed out that Northwest tribes have a governmental relationship with federal agencies, thus they are more than public interest groups. He asked that the second bullet in the BPA merchant alert letter be altered to clarify this relationship.

Karl Kanbergs (COE) wondered whether a similar crisis would likely occur this summer if the weather heats up, given the sour economy. We'd probably be in a similar situation, Kerns replied. This is a low water year, and overall load may be comparable to 2006. The risk is highest at the end of July and in August when flows are low.

4. EPA's RBM 10 Temperature Modeling

Kyle Dittmer (CRITFC) gave a presentation on the RBM 10 modeling work Ben Cope (EPA) does annually on behalf of the Salmon Managers. This spring Cope looked at potential summertime scenarios for Dworshak operations, based on water temperature and flow modeling of previous years with similar conditions. Dittmer and Dave Statler (Nez Perce Tribe) worked with Cope to

develop these scenarios based on weather data from 1976 and 1991 and tributary inflows for 1981.

According to the Weather Service's 90-day forecast, chances of heat spikes in July through September 2009 are above average, Dittmer said. Precipitation has been low in Washington, Oregon and the Idaho panhandle.

The three scenarios, attached to today's agenda, depict:

1. Flat 7 kcfs outflows from July through early September. This scenario was included because of a potential Dworshak unit outage this summer. It would leave a 609 kaf carryover into September.
2. Flat 10 kcfs outflows or full powerhouse through end August, ramping down to 7 kcfs for 3 weeks in September and to minimum flows the last week of September. The end of September elevation target is 1,520 feet. This scenario would leave a 235 kaf carryover into September.
3. The Nez Perce plan: pass inflows for the first week of July, ramp up to 7 kcfs and up to 10 kcfs by the third week in July, to 12 kcfs by the fourth week in July, followed by 3 weeks of 14 kcfs, then ramp down to reach elevation 1,535 feet by end August and 1,520 feet by end September. This leaves a 200 kaf carryover for the tribe to use at the end of September.

Dittmer also showed TMT scenarios of what might happen this summer at Brownlee Dam and Hells Canyon on the Snake River, as well as what flows at Lower Granite Dam might be under the above three scenarios.

Temperatures under the 7 kcfs flat flows scenario range from 43 to 47 degrees. The 10 kcfs scenario shows greater cooling as a result of more water being flushed out of Dworshak. In terms of temperature effects at Lower Granite, the 7 kcfs scenario shows temperature exceedances in late July and the first half of August, while the 10 kcfs and Nez Perce scenarios show temperatures remaining below the standard throughout the hot days. Temperatures in the Snake basin have been cool so far this year but could rise quickly, Dittmer warned. The Salmon Managers have reviewed these scenarios at FPAC and offered them to the COE today to jump-start the discussion of CEQUAL 2 modeling and temperature management. There was discussion of an ENSO-neutral trend in ocean conditions, which could mean for an unpredictable mix of hot and cool days this summer. Discussion of this topic will continue with presentation of the COE's CEQUAL 2 temperature modeling.

5. Dworshak Operations Update

Steve Hall (COE) showed TMT water temperature data by basin, available on the TMT webpage under water quality data. A graph depicting 2008 temperature operations is attached to today's agenda. The Orofino gage on the Clearwater River shows average temperature of 53.6 degrees F, very low for this time of year. Dworshak is releasing 45 degrees F water, while Lower Granite water temperatures remain below an average of 60 degrees F. This is significant

because CEQUAL 2 modeling doesn't produce good results when temperatures are below 60 degrees F. That's why Hall didn't run models to show TMT today.

This year's temperatures are low in relation to historical averages. Last year was cool, with late runoff, while this year's runoff occurred earlier despite low temperatures. Hall expressed confidence that temperatures will remain low over the 4th of July weekend. On July 1, he will present a model run of Dworshak operations for TMT to discuss at its next meeting, cautioning that modeling results will be unreliable if temperatures at Lower Granite remain below 60 degrees F.

Repair of a leak in the Dworshak powerhouse was successfully completed, although the repaired unit is still leaking somewhat. The reservoir refilled within a few hundredths of a foot of its target elevation of 1,600. The COE plans to operate the reservoir within the top foot, with the intent of passing inflows through the 4th of July weekend; CRITFC expressed appreciation for that operation. Although inflows are dropping, there is no storage space available, Hall cautioned, so keeping the reservoir full involves balancing the risk of a rain event.

The COE plans to keep Dworshak operations the same as last week, barring any spikes in temperature. TMT will revisit Dworshak operations on its July 1 conference call and decide then whether to have another meeting the Wednesday following the holiday.

Adams asked the Salmon Managers what information they might need to make recommendations next week regarding 4th of July operations. The COE will present CEQUAL modeling similar to previous years, comparing the likely results of different operational scenarios.

Bring the modeling results to FPAC on Tuesday, Russ Kiefer (Idaho) and Rick Kruger (Oregon) suggested. That gives the Salmon Managers time to digest the information before having to decide on a recommendation at TMT on Wednesday. Paul Wagner (NOAA) and Dittmer requested modeling of previous years as a starting point, particularly of 2007 and 2008.

Dworshak outflow temperatures are 45 degrees F; Adams asked Dave Wills (USFWS) what temperatures are needed for hatchery purposes. A range of 47-49 degrees F is good, Wills replied. The fish will definitely grow faster if water temperature is raised now. Wills requested temperature profiles. Adams showed TMT how to access water temperature data for Dworshak via the TMT page. Doug Baus (COE) will continue to present temperature thermoclines to TMT after Adams' departure as TMT chair early in July.

6. Libby Operations Update

Joel Fenolio (COE) gave a presentation in response to Jim Litchfield's (Montana) proposal last week to drop Libby outflows to bull trout minimums of 7

kcfs after the sturgeon pulse ends. Fenolio showed TMT graphs of what flows might be if the COE has to ramp up outflows after the sturgeon pulse. The 25th and 75th percentile scenarios for Libby show outflows dropping to bull trout minimums of 7 kcfs after the sturgeon pulse ends in order to reach a maximum elevation of 2449 feet by end September.

At this point, the COE plans to set Libby outflows at 7 kcfs after the sturgeon pulse ends, then reevaluate precipitation effects in July, Fenolio said. There was discussion of the fact that VARQ flows for flood control don't include the sturgeon volume as part of the decision process for Libby operations. Brian Marotz (Montana) submitted a proposal to the COE this week that shaves 2 days off the 17 kcfs outflows and 2 days off 15 kcfs outflows at Libby, Fenolio reported. The purpose of the change is to make more water available for a gradual descent in outflows to bull trout minimums.

USFWS, Idaho, Oregon, NOAA, BPA, Washington, BOR, and CRITFC representatives did not object to implementing the Montana proposal. TMT will revisit Libby operations in two weeks with updated scenarios. There was general agreement that Libby scenarios aren't needed more often than biweekly as long as inflows remain low.

7. Little Goose Operations Update

For spring operations, the adjustable spillway weir at Little Goose Dam has been in the low position, discharging flows of about 10 kcfs, Dan Feil (COE) reported. Sometime next week the crest will be moved into the high elevation position for summer operations, discharging flows of 6-7 kcfs. The trigger for switching to the high elevation crest occurs when the daily average flow drops below 75 kcfs, projected to occur on June 30, 2009.

The switch, which takes about a day to complete, involves shutting down the spill bay with the ASW in it, plus the adjacent spill bay. The switch will not affect 30% BiOp spill at Little Goose, which will continue through the remaining bays. There were no objections to this operation.

8. McNary Operations Update

In the process of moving the spillway weir to bay 19, as TMT had discussed previously, several hydrophones used to evaluate fish passage and survival went out of service, Dan Feil (COE) reported. The COE has decided to close down bays 16-22 and repair the hydrophones. Feil said the repair, which takes about an hour, was probably already in progress and would not disrupt the 50% BiOp spill level at McNary. There were no objections but Montana requested prior notification in future.

9. John Day Operations Update

A modeling trip to ERDC last week showed that the 30%/40% spill test can proceed as initially planned, Feil reported. The ERDC modeling dispelled earlier concerns that 30% flat spill might be needed for the rest of the season due to bird predation in the tailrace, a plan that the COE already reported in its monthly letter to the U.S. district court. There is no objection from FFDRWG to 30%/40% alternating spill in 2-day blocks throughout the study, which ends in mid-July, Feil said.

USFWS, Oregon, Washington, BOR and CRITFC all supported the switch back to a 30%/40% spill test.

10. Operations Review

a. Reservoirs. Grand Coulee is at elevation 1,286 feet, on track to refill to 1,290 feet elevation over the 4th of July weekend, John Roache (BOR) reported. Hungry Horse is at elevation 3,553.85 feet, discharging 2.3 kcfs with inflows of 8 kcfs. Kiefer asked whether it's correct to assume that July flows out of the Snake basin will be higher than average this year in response to recent heavy precipitation. Yes, mainly due to flood control and flow augmentation releases, although the details still need to be worked out, Roache replied.

Libby is at elevation 2,429.4 feet. The operation, discussed previously, will drop outflows to 17 kcfs soon, then to 15 kcfs and 10 kcfs, tapering to bull trout minimums of 7 kcfs around July 10.

Albeni Falls is at elevation 2,061.8 feet and passing inflows. Dworshak is at elevation 1,599.8 feet and also passing inflows, as discussed previously.

Seven-day average inflows are 98 kcfs at Lower Granite, 259.7 kcfs at McNary, and 255 kcfs at Bonneville.

b. Fish. Adults – Summer Chinook counts have been 2,000 fish per day at Bonneville and dropped to 1,600 yesterday, Wagner reported. Jack counts have kept pace with adults at the rate of 1 jack for every 2 adults. Sockeye are passing at the rate of 10,000 per day, or 71,000 to date at Bonneville for 2009. This is less than last year, but higher than the 10-year average. Last year's counts were well above the 10-year average at Bonneville, Ice Harbor, and Lower Granite. Kiefer pointed out that the PIT tag counts of sockeye at Ice Harbor this year are indicative of good sockeye returns.

Smolts – Yearling passage is nearly done. Subyearling passage is peaking at 13,000-39,000 fish per day at Lower Granite and Little Goose. Lower Monumental is passing about 10,000 subyearlings per day. There was a bump at McNary, with counts of 277,000 subyearlings on June 18 and 129,000 on June 21. These high counts reflect recent hatchery releases. Subyearling counts are currently 50,000 per day at John Day and 100,000 per day at Bonneville.

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

d. Water Quality. TDG levels are below criteria at most locations, Adams reported. The spill cap at Bonneville has been raised to 135 kcfs based on tailwater gage readings. The tailwater gage at Ice Harbor appears to be malfunctioning and will be inspected soon, with gage readings showing exceedances even at a 30% spill level of 90 kcfs. Other than that, all projects are operating in accordance with state water quality standards. River temperatures remain cool, especially on the lower Snake River, with average tailwater gage readings at Lower Granite of 51.8 degrees F, as discussed previously. Temperatures on the Columbia River are 62 degrees F at the McNary tailwater and 62.5 degrees F at Cascade Island.

9. Next Meeting

The next TMT meeting will be a conference call on July 1. The agenda will include review of Dworshak CEQUAL temperature modeling and RBM-10 temperature modeling, a Grand Coulee operations update for the July 4th weekend, discussion of the initial flow augmentation regime at Dworshak, another treaty fishery SOR, and review of the June 17 meeting minutes. This summary prepared by consultant and writer Pat Vivian.

<i>Name</i>	<i>Affiliation</i>
Jim Adams	COE
Russ Kiefer	Idaho
Dave Wills	USFWS
Rick Kruger	Oregon
Doug Baus	COE
Paul Wagner	NOAA
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Tony Norris	BPA
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