

TECHNICAL MANAGEMENT TEAM MEETING NOTES

March 7, 2001, 9:00 a.m.-12:30 p.m.

CORPS OF ENGINEERS NORTHWESTERN DIVISION HEADQUARTERS PORTLAND, OREGON

1. Greetings, Introductions and Review of the Agenda.

The March 7, 2001 meeting of the Technical Management Team, held at the Corps of Engineers' Northwest Division headquarters in Portland, Oregon, was chaired by Rudd Turner of the Corps and facilitated by Donna Silverberg. The agenda for the March 7 meeting and a list of attendees are attached as Enclosures A and B. Please note that this is a summary, not a verbatim transcript, of items discussed and decisions made at today's meeting; copies of any enclosures referenced can be obtained by calling Kathy Ceballos at 503/230-5420.

2. Current System Conditions.

Turner reported that the current system operational objective is to maintain the 11.5-foot tailwater elevation below Bonneville to support the chum emergence. With the warmer weather conditions and reduced power system demand, he said, the flows resulting from this operation are to support chum emergence, rather than power production. The current flow at Bonneville is in the high 120 Kcfs range; Grand Coulee is drafting by about one foot per day to maintain that flow level at Bonneville, Turner said. Dworshak forebay elevation has held steady over the past week at 1501.9; Dworshak continues to release 1.5 Kcfs with inflows in the 1.0-1.6 Kcfs range. Turner said Libby elevation is currently 2389.9 feet; outflow is in the process of being reduced from 4.5 Kcfs to 4 Kcfs outflow. At 4.5 Kcfs outflow, Libby is drafting about 2/10 of a foot per day. In response to a question, Turner said Albeni Falls elevation is now 2053.5 feet.

Turner said there is no new information on the water supply situation; the March final forecast will be available tomorrow, according to the River Forecast Center. As everyone here is aware, he said, we're looking at less than 60 MAF in January-July runoff at The Dalles, so the basin is experiencing an extremely low runoff year.

Turner went briefly through the basin-by-basin reductions predicted in the March early-bird water supply forecast, as well as an updated set of water supply curves for the headwater storage projects. Turner said there is now only a 37% chance Hungry Horse will refill to elevation 3459 feet, 20 feet from full, by June 30; there is only a 2% probability that Libby will refill completely in 2001.

Jim Litchfield objected to characterizing the Libby and Hungry Horse operations as "refill;" he asked whether there might be some other way to characterize the planned operations at these projects.

Pat McGrane reported that Grand Coulee is currently at elevation 1224.5 feet, with a current inflow of 73 Kcfs and outflow of 91 Kcfs. Hungry Horse is now at elevation 3497. With respect to the other Reclamation basins, said McGrane, precipitation continues to be dismal; in the Boise, Reclamation is now predicting that those projects will fall as much as 400 KAF short of refill. Reclamation's Payette Basin projects are expected to miss full refill by up to 200 KAF; Reclamation's Upper Snake projects, by up to 500 KAF. These are the basins that provide the 427 KAF, remember, said McGrane – we will be scrounging to find the 427 KAF, given the fact that we're predicting that there will be no water available in the rental pools this year.

What's the probability Grand Coulee will refill this year? Turner asked. We've been doing various model runs, McGrane replied; when you plug in the 1977 water year, and assume 65 Kcfs at Vernita Bar through June; we will fail to refill Grand Coulee by 20 feet on June 30.

It sounds as though there may be a problem in securing the 427 KAF this year, Ron Boyce observed. We're searching for it, McGrane agreed; there is 313 KAF in potential power head, plus some Reclamation storage. In the past, we've depended heavily on water rentals, McGrane said; this year, it doesn't look like there will be any water available to rent. So far, there is zero rental storage in the system.

Has Reclamation discussed the possibility of delivering some of the Upper Snake water through Brownlee? Boyce asked. We've discussed the fact that we need to have those discussions, but there is no contract in place at this point, Jim Fodrea replied. What is the status of the Hells Canyon BiOp consultations? Boyce asked. Ongoing, Jim Ruff replied – we're hoping to complete them by April 1. Will those consultations resolve the Upper Snake water delivery question? Boyce asked. Yes and no, Ruff replied – the BiOp will address the delivery of the Upper Snake water, but the shaping question will be resolved through the FERC relicensing negotiations.

It's fair to say that the amount of water Reclamation can secure will make it down to the migration corridor, said Fodrea; whether or not Idaho Power will shape that water is still being negotiated. Scott Bettin added that BPA is not interested in contracting with Idaho Power for the shaping of that water in 2001; instead, that issue will be covered in IPC's FERC license.

Therese Lamb then distributed BPA's "Updated 2001 Power and Operations Outlook" presentation, dated March 7. She noted that this presentation is also being made at today's Council meeting. We have re-run the contingency operation, as well as some new load studies, Lamb said; what became clear is that there are some definite "break points" in terms of our ability to stay financially solvent and our ability to deliver spill.

Lamb spent a few minutes going through the contents of this handout, beginning with the updated water situation. Basically, we're on a death spiral, in terms of the water supply situation, she said. Does that mean we're on course for a water year worse than 1977? she asked. If you look at the current Columbia Basin snow pack, which is 53% of average, then assume the lowest streamflows on record for March, April, May and June, we would end up at 51.3 MAF at The

Dalles for January-July, slightly lower than the record 53.8 MAF of 1977. Basically, said Lamb, given the precipitation pattern we've seen so far this winter, it is unlikely that we will drop below the 1977 level.

Lamb went through the efforts Bonneville has made to reduce load so far this winter, then moved on to a summary of operational scenarios:

Proposed Contingency Operation:

- April/May – meet Vernita Bar minimum flow
- Grand Coulee: Partial June refill to 1283 feet, end August at 1278 feet
- Dworshak: partial June refill to 1580 feet; end August at 1520 feet
- Hungry Horse: run minimum making sure to end August at 3540 feet (shape any excess water into August)
- Libby: run 4 Kcfs March through May, 6 Kcfs June through August. End August at 2439 feet (shape any excess water into April 11 through May)
- April 15-June spill: full at Bonneville, 40% at The Dalles, minimum spill levels at other projects
- July-August spill: minimum at all projects

Meet Load Study:

- FCRPS operated to meet load demands
- Assumed no spill
- Did not operate to meet any flow objectives
- Any additional water beyond what is needed to meet load was stored at upriver projects

This assumes no flow augmentation from the Upper Snake or Brownlee? Boyce asked. The 427 KAF was assumed in this study, but there was no shaping from Brownlee, Bettin replied. There was some assumption that Brownlee will draft to a certain elevation during the summer for power, but I don't know what that elevation is, Robyn MacKay added.

Lamb said that, under the contingency operation, the mean of the scenarios run (1951, 1959, 1960, 1967, 1973, 1982, 1987 and 1991) shows 59.3 MAF at The Dalles. Given that volume, flows at the project would peak at 70 Kcfs in late May, then fall to 20 Kcfs by mid-August. At McNary, flows would peak at just over 160 Kcfs in early June, then recede gradually to about 85 Kcfs by August 31. Under the "meet load" scenario, said Lamb, flows at Lower Granite would peak at about 70 Kcfs in late May, then recede gradually to 20 Kcfs by the end of August; at McNary, flows would peak at about 145 Kcfs in early June, then recede gradually to about 75 Kcfs by late August.

Moving on to BPA financial studies, Lamb said the bottom line here is that, under the proposed contingency operation, Bonneville is now estimating that there is a 45.8% chance that the agency's cash reserves could fall below zero by September 1. Under the "meet load" scenario, there is only a 0.5% chance of that occurring. Under the assumption of a 67 MAF

runoff year, the contingency operation met all of our financial criteria, Lamb said. Under the current runoff assumption of a runoff volume of 59 MAF at The Dalles, that is no longer true, she said – the proposed contingency operation would take us to a negative cash flow position, while under the “meet load” scenario, BPA would end FY’01 with fiscal reserves in the \$450 million range. If you run the study with an assumed runoff volume of 52.7 MAF at The Dalles, Lamb said, under the proposed contingency operation, there is a 42.4% probability that BPA could drop below zero cash reserves by June 1, a 92% chance by July 1 and a 100% chance by August 1 and September 1.

Obviously, said Jim Nielsen, BPA’s financial situation is going to make it extremely difficult to make an unbiased, reasoned decision about what’s best for fish. Good point, said Jim Litchfield.

Lamb touched on a summary of the effects of the “meet load” and potential contingency operations on BPA’s 2002 financials, then provided further details on the financial aspects of and spill volumes provided under the “meet load” and proposed contingency operations. Please refer to Pages 11-12 of BPA’s “Updated 2001 Power and Operations Outlook” presentation, dated March 7 (available via the TMT website) for details.

Lamb then summarized the issue at hand as follows:

If a greater than 53 MAF condition materializes, the region will have several choices about how to operate the system:

- Draft storage reservoirs deeper to enhance summer flows
- spill to improve fish passage and survival
- generate energy and revenue to build cash reserves and avoid cash flow issues in fiscal years 2001 and 2002
- Store water in excess to that required to meet load to enhance 2002 reliability, 2002 conditions for fish and cash flow for FY’2002

53 MAF is the threshold at which BPA cannot simultaneously maintain financial solvency, meet firm load, maintain any spill for fish and keep reservoirs from drafting below summer limits.

Even with a substantial rate increase on October 1, 2001, BPA has a cash flow problem in the first 6 months of the new rate period.

Lamb then provided the following conclusions from the BPA analysis:

- The federal agencies have drafted “Proposed Principals for 2001 FCRPS Operations” and are soliciting feedback from regional parties through IT, TMT and other forums
- The draft principals currently out for review contain proposed operational priorities for 2001
- The basic risk management objective in these principals is to avoid failure in the three risk areas of biological harm to fish, power system reliability and BPA financial health.

- The operation under these principals will be dynamic and will change as conditions change.
- The Federal Executives recognize the importance of engaging the region on operating priorities and principals during this difficult condition and will endeavor to do so.

The bottom line is that the proposed contingency operation will not meet BPA's financial criteria, unless we see a substantial increase in Columbia Basin water supply this spring, said Lamb.

So what happens if we do get a 53 MAF runoff year? Litchfield asked. Turner observed that the most recent RFC forecast shows a runoff volume at The Dalles of 58.6 MAF if we get normal precipitation from here on out; if precipitation is only 75% of normal, however, the RFC is estimating a runoff volume of only 51.3 MAF at The Dalles. In other words, Litchfield observed, the amount of precipitation the basin receives between now and June is critical to both runoff volume and BPA's financial health. To answer Jim's question, said Lamb, what we're looking at is a risk management exercise from here on out – how much risk are we willing to assume in terms of planning for a given runoff volume?

Basically, the Corps is proposing that we assume a 1977 runoff volume, said Ruff; it will then be up to the TMT to recommend how any volume we receive over and above that level is used.

The discussion then moved on to the status of the chum emergence. Nielsen reported that, according to the most recent field observations, 51 chum fry were taken in the beach seining operation on March 6, up from the 28 fry captured during last week's seine. They saw other fry in the water that they didn't catch, he said. Based on these results, he said, it is safe to say that emergence is still on the increase. Nielsen added that, as a general observation, the 11.5-foot tailwater elevation at Bonneville did not result in any more redds being totally isolated from the river than did the 11.7-foot tailwater, but the water over the redds on the margin of the river was significantly shallower. He added that more monitoring is planned for later this week. In response to a question from Kyle Martin, Howard Schaller said the Fish and Wildlife Service is estimating that the chum emergence will be at just over the halfway point by the end of this week.

How many redds are in the "close" area? Litchfield asked. A lot, Schaller replied. Paul Wagner suggested that, given the fact that the TMT is at a crucial decision-point regarding whether or not to continue the chum operation, it would be helpful for Washington and USFWS to step up their seining and fike net efforts. Schaller replied that financial constraints may preclude this increased effort; Nielsen said he will inquire within his agency about the potential for more intensive emergence monitoring.

The Hardy Creek trap has caught zero fry to date, said Dave Wills; the Hamilton Springs trap has caught five fry. In other words, said Schaller, the timing of chum emergence from these systems is similar to last year's.

3. New System Operational Requests.

On March 2, the Corps received System Operational Request 2001-2. This SOR, supported by ODFW, USFWS, CRITFC, WDFW and NMFS, requests the following specific operations:

- The salmon managers are requesting the following fishery operations at the Bonneville Project for up to 10 days (beginning March 9) following the March 8 Spring Creek Hatchery tule fall chinook release:
- No operation of unscreened units at Bonneville Powerhouse I or II and follow the turbine operating priority in the Fish Passage Plan
- Operate Powerhouse II as first priority. Fully load PHII before operating PHI
- Spill 55 Kcfs or up to the 120% TDG level as measured at the Warrendale monitor, assuming a minimum tailwater elevation of 11.5 feet 24 hours a day, while maintaining a level of 105% TDG (factored for depth compensation) at Ives gauge 3 (highest submerged redd at 11.5 feet tailwater).
- Operate Bonneville II ice and trash sluiceway
- Operate turbine units within 1% of peak efficiency
- Operate juvenile and adult facilities according to criteria
- These operations are to begin at 2000 hours on March 9, 2001 and continue up to 2000 hours on March 19, 2001.

Christine Mallette spent a few minutes going through the specifications of and justification for this SOR, the full text of which is available via the TNT website.

Turner noted that the repairs to the Bon PH2 DSM slide gate will be completed by tomorrow, as will the installation of screens.

Scott Bettin observed that it probably makes sense to consider the chum operation and the Spring Creek Hatchery spill request in tandem; he added that there has been some discussion among the federal parties of reducing the Bonneville tailwater depth to 11.3 feet. We are discharging approximately 30 Kcfs for chum at the moment, over and above what we would be releasing to support power production, Bettin said; without the chum operation, flows at Bonneville would be in the 100 Kcfs range. He added that 30 Kcfs is equivalent to the volume needed to generate 1,500 MW. That is not a trivial amount of money, Litchfield observed.

It boils down to a risk preference, said Lamb – the least-risky approach, for Bonneville, is to go immediately to a “meet load” operation. We’re not suggesting that we should do that at this point, said Lamb, but that is the least-risky operational scenario currently on the table.

If we’re in a 53 MAF runoff year, the impact of such a reduction in flow would be insignificant on BPA’s financial health, Schaller observed. In a 53 MAF runoff year, our options definitely narrow, Lamb replied.

I think it’s time to face reality, said Litchfield – this is a very poor water year, and the current chum operation is significantly impacting our options later in the year. We’re selling

1,500 MW of power now when the prices are down, meaning that BPA will then need to purchase power later in the summer, when power prices are much, much higher.

We have to make the call about ending the chum operation at some point, said Wagner, but in NMFS' view, given the status of the chum emergence and the fact that we've stuck with this operation this long, that time isn't quite at hand. Instead, the federal parties have been discussing a rampdown to an 11.3-foot tailwater depth at Bonneville, which, given the current tidal situation, would require a flow of about 120 Kcfs at Bonneville to maintain. We will continue to monitor emergence, he said, and if seine catches begin to decline, we can convene a call to discuss ending the chum operation. That's what the Corps would propose, said Turner – go to a tailwater elevation of 11.3 feet at Bonneville, hold it through the weekend and continue to monitor. We should probably plan to have a conference call on Monday, he added, to discuss both monitoring results and the Spring Creek operation.

Bettin said Bonneville is willing to spill 50 Kcfs for 24 hours in support of the Spring Creek Hatchery release. If the salmon managers want, he said, it would be possible to shape that spill – 25 Kcfs over two days. We realize the significance of this run, he said, but given the presentation you've heard today, this is all the spill BPA can commit to. In response to a question from Litchfield, Bettin said that, at current market prices, 50 Kcfs of spill for 24 hours will cost BPA about \$2 million.

After a brief caucus break, Mallette said that given the conditions on Oregon's support of this SOR and the fact that Spring Creek is a federal facility, she would defer to the Fish and Wildlife Service for a recommendation on the Spring Creek Hatchery spill operation. Wills said the Fish and Wildlife Service requests that spill begin the morning of March 10 and continue for 48 hours through Monday morning, at a volume of 50 Kcfs. That volume is not available to you, Bettin said – until this morning, you were going to get zero spill. You can shape the 50 Kcfs over two days, at a rate of 25 Kcfs, but we can't give you 48 hours of 50 Kcfs spill. We ask that you take our request back to BPA and let us know, Schaller said. Bettin agreed to do so, but said it will make no difference – this is BPA's proposal.

We'll have to go back and think about BPA's proposal, said Schaller – we need some additional time to consider how best to use the available spill volume. In the meantime, he said, we would still like BPA to consider our request. I understand, said Bettin. It was agreed that BPA will discuss this issue directly with the Fish and Wildlife Service later today or tomorrow.

With respect to the other requests in this SOR, Turner said it should be possible to keep the fish passage facilities in criteria for longer than two days; it should also be possible to meet all of the other operational specifications requested, with the possible exception of the ice and trash sluiceway operation. With respect to the latter, erosion at the discharge point is a concern, so Bonneville project personnel will be monitoring that problem.

The discussion then returned to the chum operation; Silverberg recapped the federal proposal as follows: maintain an 11.3-foot Bonneville tailwater depth during the day, then increase tailwater depth to 11.5 for six hours at night. This operation would continue through this

weekend. As Grand Coulee nears elevation 1220, said Lamb, we will need to reevaluate, and decide whether or not to increase discharge from Dworshak to maintain the chum operation. It was agreed that it will likely be necessary to convene a TMT conference call on Monday to discuss this operation.

We should probably decide what our preferred operation will be once Grand Coulee hits elevation 1220, said MacKay. In response to a question, McGrane said Grand Coulee outflow will likely drop by about 13 Kcfs once elevation 1220 is achieved.

The group discussed the priority of which headwater storage project or projects should increase discharge first once Grand Coulee reaches elevation 1220. Wagner said that, as stated at a previous meeting, NMFS is unwilling to increase Dworshak outflow in order to maintain the chum protection operation once Grand Coulee reaches elevation 1220. In response to a question from Ron Boyce, Lamb said the 1220-foot elevation floor at Grand Coulee is a hard system reliability constraint.

Boyce suggested that this is probably a conversation better-suited to TMT's Monday conference call. In the interim, it was agreed to implement the suggested federal operation at Bonneville beginning immediately, dropping to a tailwater elevation of 11.3 feet during daytime hours and increasing the tailwater elevation to 11.5 feet for six hours during nighttime hours through the weekend.

I am uncomfortable with leaving today's meeting without a contingency plan for which projects we're going to turn on once Grand Coulee reaches elevation 1220, said MacKay. I believe the federal proposal specifies that no headwater projects will increase discharge to maintain the chum operation once Grand Coulee reaches elevation 1220, said Nielsen. In that case, said Steve Pettit, it's not a salmon managers' decision – the action agencies just need to make that decision on a power operations basis. Litchfield reiterated his suggestion that Dworshak, Libby and Hungry Horse be drafted proportionately, based on their probability of refill.

Is there agreement with NMFS' suggestion that, once Grand Coulee reaches elevation 1220, the chum protection operation is over, and discharge from the headwater storage projects will not be increased to maintain it? Turner asked. No objections were raised to Turner's characterization, given the critical water supply situation this year.

Boyce made the point that, if the chum operation is discontinued once Grand Coulee reaches elevation 1220 feet, that would be for power purposes, because of the system reliability floor at that project. Have the action agencies investigated all possible sources of water in the U.S. and Canada that would allow us to maintain the chum operation a little longer? he asked. Yes, we have, Lamb replied; the answer is no.

We also need to decide on the drafting priority for the headwater storage projects in order to meet load once Grand Coulee reaches elevation 1220 feet, Turner said. After a few minutes of discussion, it was agreed that the Corps, Reclamation and BPA will make a decision about which

projects will be drafted first once Grand Coulee reaches elevation 1220 feet. Wagner reiterated that NMFS regards Dworshak as the lowest available priority. The operating agencies will let you know once that decision is made, MacKay said.

In response to a question from Lamb, Nielsen said Washington's operational proposal will be available by this Friday; he said he will provide a copy to Turner for posting to the TMT website. Boyce said there is a meeting next Tuesday to discuss the Oregon plan; hopefully it will be available by next week.

4. Recommended Operations.

Recommended operations were addressed during the previous agenda item.

5. Continued Development of 2001 System Operation Strategy.

Discussion of this agenda item was deferred until a future TMT meeting.

6. Review of Water Management Plan.

Discussion of this agenda item was deferred until a future TMT meeting.

7. Update on NWPPC Request for TMT Decision Rationale.

Discussion of this agenda item was deferred until a future TMT meeting.

8. Next TMT Meeting Date.

It was agreed to convene a conference call at 2 p.m. Monday, March 12 to discuss system operations once Grand Coulee reaches elevation 1220 feet. It was further agreed to convene an IT/TMT meeting for 10 a.m. Wednesday, March 14. The next face-to-face meeting of the Technical Management Team was set for Wednesday, March 21 from 1 p.m. to 4 p.m. Meeting notes prepared by Jeff Kuechle, BPA contractor.