

**TECHNICAL MANAGEMENT TEAM
MEETING NOTES
April 9, 2003
CORPS OF ENGINEERS NORTHWESTERN DIVISION OFFICES – CUSTOM HOUSE
PORTLAND, OREGON**

FACILITATOR'S SUMMARY NOTES ON FUTURE ACTIONS

Facilitator: Donna Silverberg

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.

Towboat Association Request for Snake River Operations:

Cindy Henriksen, COE, reported on discussions with the Towboat Association over the Snake operations that began last week. From the COE's perspective, there needs to be a balance between safe navigation and ESA requirements. Larry Johnson, Chair of the Towboat Association, described some of the navigation problems that have occurred for the tug and tow boats at the Snake River dams. The Association would like to see the pools operated to allow fourteen feet of water for safe navigation, even with the lighter loads the boats have been carrying. He provided a handout that proposed operations for each of the Snake River projects.

A survey taken last year shows Lower Granite, the confluence of the Snake and Columbia Rivers, Lower Monumental and Ice Harbor as problem areas. The COE would like to do further research on these and other areas in collaboration with the Towboat Association and the Coast Guard. TMT was supportive of this collaborative effort and suggested that they work quickly to allow a balance of safety for navigation and fish.

ACTION: The COE, Coast Guard, and Towboat Association will work together to gather data for presentation at the next TMT meeting, April 16. The data should include field observations, and a database query of the TBA's over-winter and current information regarding problems at the MOP level. TMT members asked that the focus be narrowed down to the critical problem areas. In the interim, operations will remain as follows:

- Lower Granite – MOP+1
- Little Goose – MOP+1
- Lower Monumental – MOP
- Ice Harbor – MOP+1

CRITFC will comment on this issue at the next TMT meeting, after having internal policy discussions.

Water Management Plan Update:

Scott Boyd, COE, will provide a draft WMP Spring/Summer Update at the next TMT meeting.

Grand Coulee Flow Shaping in April:

The COE provided Q Adjust information to help inform Salmon Manager decisions particularly for the month of April. The query was “How much will Grand Coulee draft and when will refill occur?” According to the model runs, Grand Coulee did refill most times. The Salmon Managers will look at the information that was provided and comment at the next TMT meeting.

Update from IT:

Cindy Henriksen reported on the results of the IT meeting at which IT members discussed SOR 2003-5, elevated from TMT. As a result of that discussion, spill began last week. TMT was asked to re-examine the water supply forecast and other conditions today and decide whether or not to continue to spill. NOAA Fisheries will be developing criteria that includes fish/biological needs, river levels, temperature and other factors to be considered in years (such as this) that are so close to Biological Opinion target numbers.

Vernita Bar:

Chris Carlson, Grant County PUD, reported on March 31-April 6 operations at Priest Rapids. April 3 was the only day that operations outside the band width occurred; the PUD is looking into the reason for this. CRITFC requested that flows be smoothed out as much as possible. Samples taken over that week showed 18 live Chinook and 19 mortalities in a 2964 sq. foot area. April 25 is the projected date for the end of emergence.

ACTION: Cindy Henriksen will work with Chris to post this information on the TMT web page.

Lower Granite RSW Operations:

The COE reported that there will be a forty-six day test beginning April 14 at Lower Granite. The test will be included in the WMP Spring/Summer update. There will be an update on why the RSW test program has changed since last year at the next TMT meeting.

SOR 2003-6/ Beginning of Lower River Spill:

SOR 2003-6, from the Salmon Managers, requests Lower Columbia spill to start on April 14 to the 120% spill cap to support the passage of juveniles. The spill program will go as follows:

- **McNary:** Spill will begin at 6pm on April 14, up to the gas cap, for 12 hours. Power house will be the constraint.
- **John Day:** There will be a spill test on April 10 of 30% from 7am – 5pm. Spill will begin again on April 14 at 6pm.
- **The Dalles:** Spill will begin at 6pm on April 14 at 40% of flow. A spill test will also begin sometime around April 14 so some fluctuations in flow may occur. There will be follow-up discussions of this at the next TMT meeting.
- **Bonneville:** 75 kcfs of spill will begin at 5am for twelve hours for two days, then two days at the gas cap, to accommodate an adult fallback study.

Snake River Spill:

STP forecasts show April 3-June 20 at 17.75 MAF and 86.4 kcfs. The Q Adjust model shows 80 kcfs. The forecasts are still “on the cusp” of BiOp. target numbers at Lower Granite. Spill will continue and TMT will continue to monitor and revisit the issue next week. NOAA is looking to frame up criteria for TMT on this issue and should have something by next week.

Current Conditions:

Fish migration: Record numbers of adults and yearling Chinook have been observed. The highest number of seined chum was 302 at Ive's Island on April 1; high numbers were also seen at Hamilton Creek. Ron Boyce and Shane Scott will set up a seining field trip sometime before May.

Water supply forecast: The April final forecast is out. The Jan-July forecast at Grand Coulee is 52.9 MAF (84% of normal); Lower Granite is 17.1 MAF (79%); The Dalles is 72.4 MAF (78%); and Libby is 4.95 MAF (79%) – which would allow for a sturgeon flow operation. Hungry Horse is discharging at a power house minimum and is at elevation 3511.2'. Grand Coulee is at elevation 1284.3'. The Dworshak April-July water supply forecast shows a 2.32 MAF increase from earlier forecasts. The COE is closely monitoring the snow pack density level. Cindy Henriksen will gather further information on this and share it with TMT.

Lake Roosevelt Forum:

The April 23 TMT meeting will be held in Spokane at the Lake Roosevelt Forum conference, from 10am-2pm, with an hour lunch break in-between. TMT members will have an opportunity to attend a meeting from 9-10am with the Transboundary Gas Group.

Next Meeting, April 16:

Agenda Items:

- Grand Coulee Shaping
- MOP Operations in the Snake – Towboat Association, COE
- Columbia Falls/Priest Rapids SOR
- Current Conditions
- RSW Lower Granite Test Design – Update
- Other

1. Greeting and Introductions

The April 9, 2003 Technical Management Team meeting was chaired by Cindy Henriksen of the Corps and facilitated by Donna Silverberg. The following is a distillation, not a verbatim transcript, of items discussed at the meeting and actions taken. Anyone with questions or comments about these minutes should call Henriksen at 503/808-3945.

2. Towboat Association Request for Snake River Operations.

Henriksen said the Corps had received a letter from the Columbia River Towboat Association (CRTA) regarding operations in the Lower Snake River navigation channel. Henriksen noted that minimum operating pool (MOP) operations began last week at the four Lower Snake projects, as requested by the salmon managers; various industry representatives attended today's meeting to explain the navigation problems this operation is causing them. They would like to work with TMT to find a solution that is both fish-friendly and safe for navigation, Henriksen said.

Larry Johnson of the Towboat Association spent a few minutes going through the letter,

noting that the towboats need 14 feet of water to navigate safely. The specific operational request contained in the letter is for MOP+2 at Ice Harbor, Lower Monumental and Little Goose, and MOP+3 at Lower Granite. This is what we think we need to ensure 14 feet of depth in the navigation channel, he explained. The CRTA letter is available via hotlink from today's agenda on the TMT homepage; please refer to this document for full details and justification.

Johnson noted that the Association's biggest fear is the possibility that a tow loaded with diesel or other fuel could run aground, causing a potentially catastrophic spill. The health and safety of the crews is of course another major concern; we don't want to find out the hard way where those safe pool levels really lie, he said.

How did you determine these requested pool elevations? Ron Boyce asked. Are those just your best estimates of the pool elevations needed to provide 14 feet of depth through these channels? That's correct, Johnson replied – it's based on the in-river experiences of our tow boat captains under various pool operational regimes. He added that it is the Association's hope that the Corps and/or the Coast Guard will conduct a detailed survey of navigation channel bathymetry soon. Carl Knaack said the Corps' Walla Walla District generally conducts this survey in July; the results will be available in August.

Paul Wagner observed that Little Goose and Lower Monumental were operated at MOP+1 last year; the TMT, at least, heard no reports of navigational problems. Has something changed? he asked. The river is changing all of the time, Henriksen replied; the Snake River is fairly volatile. And dredging has not occurred recently? Ron Boyce asked. There is a lawsuit against the Corps dredging program in the Lower Snake, Wagner replied; NMFS is re-consulting on its dredging BiOp at the court's direction. In response to a question, Johnson said the Association has been light-loading its barges for the past year.

Based on the Corps' July survey last year, how many areas were found that were 14 feet or less, and does your data comport with the Association's request? Wagner asked. The request covers more areas than were included in our surveys last year, Knaack replied. The letter includes a number of areas that were not identified in our current dredge plan, he said; however, there are definitely some places both the Corps and the Association have identified as problems, such as the area around Buoy 58A at the Lower Monumental Dam entrance.

It was noted that operation of McNary Pool between elevations 337 and 340 improves conditions in the problem site identified in the first bullet (the entrance of the Snake River up to the Ice Harbor cut), although this operation was not requested in the CRTA letter. Is it fair to say that Ice Harbor and Little Goose pools are the two most critical areas? Boyce asked. Johnson replied in the affirmative. Boyce said that, given the fact that the salmon managers would like to maintain the lowest possible pool elevations for fish passage and research, some additional research to identify the lowest possible safe navigation elevations would be useful. Wagner added that the need to maintain Lower Granite pool at MOP+1 to provide consistent hydrological conditions during the RSW test (the RSW test runs through May 28) makes the request for MOP+3 at Lower Granite unlikely to be implemented.

Wagner went briefly through the reasons the salmon managers want to see MOP+1 at this

time of year: essentially, because there is approximately a 7% improvement in water velocity and travel time through the Lower Snake pools at MOP+1 vs. full pool. The group offered a few clarifying questions and comments regarding annual bathymetric changes to the channel, as well as to the Association's current and historic barge loading practices.

Boyce reiterated his request that the Association provide more detailed information about the bare-bones navigational minimum in terms of the operation of the Lower Snake pools. Henriksen said the Corps, Towboat Association, and Coast Guard will work cooperatively and get out on the river as soon as possible and survey the problem sites to see what pool elevation is necessary to provide safe navigation conditions.

In the interim, it was agreed to operate the Lower Snake pools in a manner similar to the way they were operated last spring, which provided acceptable navigational conditions. Henriksen said she will work with Walla Walla District and the CRTA to put together a comprehensive list of trouble spots and grounding incidents and as much Corps/CRTA/Coast Guard field survey information as possible in time for discussion at next week's TMT meeting.

Henriksen summarized the operation by saying that, beginning today, and for the next week, at least, the pools will be raised to levels similar to those implemented in 2002: MOP+1 at Lower Granite, Little Goose and Ice Harbor, MOP at Lower Monumental. No TMT objections were raised to this operation, although Kyle Martin said he will need to run this operation by CRITFC's policy personnel before agreeing.

3. WMP Update – Finalization of Spring/Summer Update.

Scott Boyd reported that the April final water supply forecast is now available, so based on the decisions the TMT makes today, it should be possible to finalize the spring/summer update by next week. It was agreed to discuss this topic again at next week's TMT meeting.

4. Grand Coulee Flow Shaping in April.

Wagner said that, at the salmon managers' request, the Corps had done a Q-Adjust run on this issue; the question that run was intended to answer is, what is the likelihood of meeting the seasonal average flow target of 135 Kcfs at Priest Rapids beginning in mid-April, and maintaining that operation through June. If that Priest Rapids flow target can be met, what would be the impact on Grand Coulee elevation and refill probability? he said. This is part of the Corps' ongoing efforts to balance system operations among all river uses, Henriksen explained; we want to start homing in on expectations across the entire season.

We took the April final Water Supply Forecast and shaped it 59 different ways, according to the 59-year historic water record, she continued; we initialized the run beginning on April 15. We used 135 Kcfs as the target at Priest Rapids flow for the entire operating period to test whether Grand Coulee might refill under that operation, Henriksen explained. The bottom line is that, under this modeling scenario, Grand Coulee would refill 53 times out of the 59 years while meeting the 135 Kcfs seasonal average flow target at Priest Rapids; the average Priest Rapids flow in April, according to Q-Adjust, is 136 Kcfs; in May, 145 Kcfs. Average flow in June is 151

Kcfs, not 100 Kcfs as shown in this version of the handout.

So what needs to happen with this today? Silverberg asked. As we go through the season, assuming TMT meets every other week, we will be setting operations that will run for the next two weeks, Henriksen replied; today's operation would run through April 21, she said. We want everyone to have a common understanding of what the expected operation is. So this indicates that it should be possible to meet the Priest Rapids seasonal average flow of 135 Kcfs this spring and still refill Grand Coulee? Boyce asked. Correct, Henriksen replied. The salmon managers will likely be developing an SOR specifying that operation in time for submission next week, Boyce said.

On a related topic, Martin said Bob Heinith has observed that flows through the Hanford Reach have been fluctuating significantly over the past several weeks, in some cases exceeding the flow bands agreed to under the Hanford Reach Fish Protection operation. Bob would like to request that the project operators do everything they can to minimize flow fluctuations from Grand Coulee and Priest Rapids, said Martin, given the fact that there are significant numbers of juveniles moving through the Hanford Reach at this time. In response to a question, Scott Bettin said there were a total of 38 strandings reported at the Hanford Reach monitoring sites last week.

With respect to the fish protection operation, Chris Carlson reported that, for the period of March 31-April 6, day-average discharge from Priest Rapids was 110 Kcfs on March 31 (40 Kcfs flow band), 99.7 Kcfs on April 1 (40 Kcfs band), 95.9 Kcfs on April 2 (30 Kcfs flow band), 99.5 Kcfs on April 3 (30 Kcfs flow band); 105.6 Kcfs on April 4 (30 Kcfs flow band) and 73 Kcfs on April 5-6 (20 Kcfs flow band). Operations exceeded the flow band on April 3; Grant County PUD is investigating why that occurred.

Are there any limitations on how much flows can increase? Henriksen asked. Those calculations are based on Rock Island discharge, Carlson replied; the only restriction has to do with the boat basin elevation at that project. The group devoted a few minutes of discussion to the nuances of the fish protection operation.

Martin reiterated Heinith's flow fluctuation concerns; Carlson replied that Grant County PUD is certainly trying to minimize those flow fluctuations within the many operational constraints that have been imposed.

With respect to stranding, said Carlson, also during the week of March 31-April 6, Paul Hoffarth looked at 18 sample areas; he found 37 stranded chinook, 19 of which were mortalities. In response to a request, Henriksen said she will work with Carlson to ensure that future Hanford Reach fish protection and stranding reports are available via the TMT homepage prior to the meeting. In response to another question, Carlson said it still appears April 25 will be the end of emergence.

5. IT Update.

Henriksen reminded the group about the Lower Snake spill and forecast issue elevated to IT last week, regarding SOR 2003-5. At last Thursday's IT meeting, we were using a Q-Adjust

run based on the March mid-month forecast, Henriksen said; that forecast resulted in Lower Granite flow very close to the 85 Kcfs seasonal average flow at Lower Granite. The IT recommended that the action agencies implement spill at the Lower Snake projects as requested in the SOR, Henriksen said based on the mid-month forecast; they also directed the TMT to revisit the forecast information at today's meeting, as well as developing criteria to lay out when spill should stop at the Lower Snake projects in the future, if the forecast deteriorates. The April early-bird forecast is larger than the March mid-month forecast that was used to make the decision to begin spill, so the seasonal average flow is expected to be somewhat larger than it was when we made the decision to start spill, said Henriksen. The bottom line, however, is that spill has now begun at the Lower Snake projects, Henriksen said.

6. Lower Granite RSW Operations.

Bettin said there is a new spill schedule available for Lower Granite; it now shows a 46-day RSW test beginning April 14 and running through May 28. The schedule will alternate between the RSW test condition (19 Kcfs total spill) and the BiOp spill condition (12 hours of spill up to the gas cap), in two-day randomized block designs. Rudd Turner added. In response to a request, Turner said he will post the new spill schedule to the TMT website, and it will also be included in the 2003 Water Management Plan. Chris Ross noted that the RSW operation (spill through the RSW plus one dog spill at each of the other spill bays) represents a change from the originally-requested operation; it was agreed that the TMT will discuss the reason for that change at its meeting next week.

7. Beginning of Lower River Spill.

On April 8, the action agencies received SOR 2003-6. This SOR, developed and supported by USFWS, NOAA Fisheries, IDFG, ODFW, WDFW and CRITFC, requests the following specific operations:

- Beginning April 14, spill daily at the Lower Columbia River projects according to the 2000 Biological Opinion up to the 120% spill cap.
- At McNary Dam spill should occur between the hours of 6 p.m. and 6 a.m. and instantaneous volumes should be limited only by the gas cap.
- Spill daily at John Day Dam at 60% of instantaneous flow during nighttime hours at flows up to 300 Kcfs, and up to the 120% gas cap at flows greater than 300 Kcfs. Spill should occur from one hour before sunset to one hour after sunrise.
- Spill at The Dalles Dam shall occur for 24 hours daily at a level equal to 40% of instantaneous flow.
- Spill at Bonneville Dam shall be up to the 120% gas cap during nighttime hours, and 75 Kcfs or up to the gas cap during daytime hours for adult passage evaluation.

Wills spent a few minutes going through the justification and background for this SOR, the full text of which is available via hotlink from the TMT homepage. Please refer to this document for full details.

Wills noted that the principal driver for this request is the number of fish passing through

the John Day project and out of the Umatilla system. Henriksen and Bettin requested that the group go through the SOR to discuss the specific timing of the start of spill at each project. Bettin said the action agencies agree to implement spill up to the gas cap at McNary at 6 p.m. on April 14, noting, however, that it is unlikely that it will be possible to spill up to the gas cap at that project unless total river flow increases dramatically in the next five days, since McNary must have a minimum of 50 Kcfs running through the powerhouse. At John Day, Bettin said there is a spill test tomorrow beginning at 7 a.m. (one day only) during which the project will spill up to 30% of river flow for 12 hours. The regular John Day spill operation will be implemented as requested beginning April 14 at 1800 hours. There is a FFDRWG meeting today to discuss the 45% vs. 60% of total river flow question at that project today, Bettin added.

At The Dalles, spill will begin as requested on April 14 at 1800 hours; there will be a spill test beginning some time after April 14, looking at different spill patterns; however, the project operators will still be targeting 40% of day-average flow spill during the three-week test, Bettin said. At Bonneville, there is an adult fallback study going on; the researchers would like us to spill 75 Kcfs beginning at 5 a.m. on April 14, rather than 6 a.m., Bettin said – that will allow them to get in the full test block on that day. In response to a request, Boyd said he will include the most recent spill schedule at each project in the spring/summer update to the 2003 Water Management Plan.

So there is agreement to implement SOR 2003-6? Silverberg asked. That's correct, Bettin replied.

8. Current System Conditions.

With respect to the Snake River spill program, Henriksen said the most recent STP forecast (based on the April final Water Supply Forecast) shows an April-July runoff volume of 17.5 MAF and a seasonal average flow of 86.4 Kcfs at Lower Granite. However, she said, in the Q-Adjust run for the period April 15 through June 20, the threshold for the commencement of Lower Snake spill based on that monthly time-step model is 81.2 Kcfs at Lower Granite; the number in the most recent Q-Adjust run, based on the April final forecast, is 80.7 Kcfs. In other words, said Bettin, we're just under the threshold for Lower Snake spill, according to the Q-Adjust model.

The group devoted a few minutes of discussion to the differences between the STP and Q-Adjust model inputs and outputs; the bottom line is that we're really, really close to the threshold, Bettin said. We do plan to continue Lower Snake spill, at least for the time being, but we would like to continue to revisit this topic at future TMT meetings. We will also need to schedule some discussion of the spill start/stop criteria in years where the water supply is very close to the threshold, such as this one, Henriksen said; NOAA fisheries is going to provide that.

Moving on to fish passage information, Wagner drew the group's attention to the most recent adult passage reports. At Bonneville, said Boyce, a record number of adult spring chinook have already passed the project – over 40,000 through April 8, compared to a 10-year average of only about 2,000. We're seeing mostly very large 5-year-old fish, he said, noting that he had looked back over 30 years of historic passage records and had never seen this many fish this

early. The fisheries above I-5 have been shut down temporarily, he said; the current forecast of nearly 150,000 adult spring chinook is going to be revisited later this week. More than 7,500 fish passed Bonneville on April 6 alone, he added.

With respect to smolt data, Wagner said yearling chinook passage at Lower Granite has declined from the 14,000+ seen on April 4 to just under 4,000 smolts yesterday; numbers are still well ahead of the historic average indices for this date, however. River temperatures are running about 47 degrees F at Lower Granite, he added. Boyce also touched on Ives/Pierce Island chum emergence, noting that the highest number of chum seined – 302 – occurred on April 1 at Ives Island. Chum emergence timing and abundance are tracking past years, he said; there have also been a lot of juvenile chinook captured recently. Fish numbers are still looking good, as is Bonneville tailwater elevation, Boyce said. At Hamilton Springs and Hardy Creek, said Wills, numbers are still very high at Hamilton Springs and are starting to tail off at Hardy Creek, although the Hardy Creek trap tends to become less efficient at higher flows. Overall, said Boyce, the chum numbers for these systems are very large this year – it’s a good run.

Boyce added that he will be setting up a field trip to observe the Lower Columbia chum seining and trapping operations during the last week in April; he asked anyone interested in participating to contact him.

The group spent a few minutes perusing the year-to-date chinook and steelhead smolt index graphs for the Lower Snake projects. Based on this information, are you still comfortable that the outmigration is on track and spill should continue at the Lower Snake collector projects? Bettin asked. Yes, Wagner replied.

With respect to the water supply forecast, Henriksen reiterated that the River Forecast Center’s April final forecast was released yesterday. It shows the following:

- Grand Coulee (Jan-July): 52.9 MAF, 84% of average
- Lower Granite (April-July): 17.1 MAF, 79% of average
- The Dalles (April-Aug) 72.4 MAF, 78% of average
- Libby (April-Aug): 4.95 MAF, up from 4.1 MAF in the last forecast, 79% of average, which will allow for a Tier 1 2003 sturgeon flow operation of 800 KAF above minimum flow this year. Henriksen said Bob Hallock had requested some modeling runs looking at potential sturgeon operations; it now appears that the 2003 sturgeon “pulse” will consist of 18 days of higher flow (just under powerhouse capacity) from Libby beginning in late May. We will need to do some coordination as to how we operate Libby and Hungry Horse combined to avoid transmission system constraints, said Bettin; in general, more water is a good thing, but we don’t want to overload the lines.

Tony Norris reported that Hungry Horse is currently at elevation 3511.2 feet the project is filling about 2/10 of a foot per day. The project is releasing just over minimum powerhouse discharge because Columbia Falls flow is above the 3.372 minimum due to natural runoff, Norris said. He added that the current elevation at Grand Coulee is 1284.3 feet.

The April final water supply forecast at Dworshak is 2.32 MAF, April-July, 88% of

average, a dramatic increase, up from 1.8 MAF in the last forecast, Henriksen said. The project's April 30 flood control elevation is 1541.9 feet; the current Dworshak project elevation is 1577 currently, with 16 Kcfs outflow. We will continue to release that high flow for the foreseeable future, she said; we're watching the Dworshak snowpack very carefully. Current TDG levels below the project are 109%; we may need to increase outflow quickly and exceed the gas cap if the snowpack comes off quickly, Henriksen said. She noted that all headwater storage projects are expected to be at their flood control elevations by April 30; we're trying to release as much water as we can from Dworshak in order not to fill much above from elevation 1577 in April. She said the Dworshak-Grand Coulee shift will allow Dworshak to be a few feet above that elevation, but again, we're close to the snowpack density level that indicates that the snowpack is ready to come off, so we're watching that information very closely.

The Columbia Generating Station is up and running, but is going to come back down for refueling in May, Bettin said.

9. New System Operational Requests.

This topic was covered under Agenda Item 7, above.

10 Recommended Operations.

Recommended operations were covered during a previous agenda item.

11. Next TMT Meeting Date.

With respect to the Lake Roosevelt Forum, Shane Scott said the TMT is scheduled to meet at 10 a.m. Wednesday, April 23 at the Doubletree Hotel City Center in Spokane. The next meeting of the Technical Management Team was set for Wednesday, April 16 (a conference call). Meeting summary prepared by Jeff Kuechle.