

**TECHNICAL MANAGEMENT TEAM  
MEETING NOTES  
April 16, 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.

**Vernita Bar:**

Chris Carlson, Grant County PUD, reported on Vernita Bar operations for the previous week. The end of emergence is expected to be April 26 or 27 due to temperature changes in the river. Fish monitoring is being done with WDFW; fish were found at seven sites. CRITFC officials reported seeing many dead fish on April 11. Oregon asked Grant County PUD to try to minimize flow fluctuations since there are record numbers of spawners. There will be a meeting to discuss Vernita Bar/Hanford Reach, hosted by the Grant County fish biologists, on May 1 at SeaTac. Anyone interested in learning more about this meeting should contact Joe Lukas. TMT members are welcome and encouraged to attend. Grant County PUD was encouraged to do the best it can to minimize flow fluctuations from Priest Rapids Dam.

**Towboat Association Report:**

The Coast Guard, Walla Walla COE and Columbia River Towboat Association (CRTA) visited seven locations in the river that the CRTA said were problematic for navigation. No problems were seen this year, but there may be navigation problems next year under a MOP +1 operation at Lower Granite. The CRTA soundings confirmed that in the absence of dredging, the river is shifting, silting in and reducing both in width and depth. The CRTBA recommendations are listed below:

- Conduct a complete survey of the bottom of the Snake River before next year.
- Operate at MOP +1 (same operations as last year) while completing the survey for next year.
- Dredge the river.
- Spill at Lower Granite until the barge leaves the lock.

The Walla Walla COE reported that there is a bottom survey scheduled for August. Chris Ross reported that NOAA will re-enter consultation with the COE on the possibility of dredging in Fall/Winter '03. CRITFC would be opposed to any operation outside of MOP/ MOP+1. For '03 Oregon would like to stay as close to BiOp. operating requirements as possible, and would like to see additional data as it is available.

The CRTA also reported that there was a navigation problem due to the spill pattern at John Day earlier in the morning.

**ACTION:** The COE will check into the possibility of going to a flat pattern at John Day. Cindy Henriksen will work with the Portland District COE and the CRTA to find possible solutions to the reported problem. Any changes to BiOp. spill will be coordinated with the Salmon Managers. In the interim, a towboat captain will call ahead if there is an issue and work with the operators to safely navigate the towboats. Information will be shared with the TMT via email.

**Water Management Plan Update:**

Scott Boyd, COE, reported that additional information from NOAA and BPA on research has been added to the Spring/Summer update. An update was made that flood control is based on the April (not March) final forecast. There will be a further update on the Update at the May 7 TMT meeting.

**Grand Coulee Flow Shaping in April:**

An SOR is expected in the next week for Grand Coulee flow shaping from the Salmon Managers. Dave Wills, USFWS, reported that likely the SOR will be for an April 21 beginning date to ramp up Priest Rapids flows so that there is a minimum of 135 kcfs by April 24, while maintaining Grand Coulee refill objectives. At this point, the Salmon Managers expect that both objectives can be reached. TMT agreed with the concept of the request, which will be put into writing and circulated via email. Unless there is a significant change to the request expressed today, there will not be a need for a TMT conference call on this issue as there were no objections expressed by members.

**Fish Spill Status and Tracking:**

Laura Hamilton, COE, provided a handout of a 12-hour average total dissolved gas with a 24-hour spill. Three exceedances of state water quality standards were tracked, at Lower Monumental and Ice Harbor, due to “uncertainties when using best professional judgment”. A suggestion was made to track times when there is not spill to the gas cap. The COE is working on spill guidance criteria and invites anyone interested to observe how the tracking process works.

**Lower Granite RSW Operations:**

Rudd Turner, COE, reported that the RSW test began on Monday, April 14 at 6am. There is a difference between the total spill estimate in the proposal versus real time spill due to a rounding function of the monitoring system. The last day of the randomized block design test is May 29.

**Current System Conditions:**

*Fish migration status:* Adult spring Chinook have been observed at high and increasing numbers. Large numbers of juveniles have also been observed at Lower Granite in the last few days. The tracking of chum for 2003 has shown the highest numbers in recent years. Tailwaters have been good for both chum and fall Chinook. The end of emergence date for chum is yet undetermined. The tailwater at Bonneville has gotten close to 15.5’ elevation levels at 75 kcfs spill. Fish protection is the number one priority; the spill test is number 2. The Salmon Managers will continue to monitor the situation.

*System Conditions:* Hungry Horse is filling at ¾' per day and is at elevation 3514.8'. Grand Coulee is at elevation 1582.9'. Dworshak is operating for flood control at 16 kcfs outflows. Libby is at 4 kcfs outflows; potential sturgeon operations at Libby are being discussed.

### **Lake Roosevelt Forum:**

Shane Scott, WDFW, confirmed that there will be an 8:30-10 am "meet and greet" meeting for TMT and the Transboundary Gas Group, followed by a regular TMT meeting from 10 am-2 pm (including an hour lunch break).

#### **Agenda:**

- Priest Rapids SOR
- Lower Columbia Seasonal Strategy
- Lake Roosevelt Issues
- Current System Conditions
- Upper River Tribal Issues (Tony Norris will coordinate this)
- Towboat Association Update

**\*The call-in number for the April 23 meeting in Spokane will be (509) 358-7488. The next TMT meeting in Portland will be held on May 7 from 9am-noon.**

### ***1. Greeting and Introductions***

The April 16, 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 and NWW Report on Lower Snake Field Observations.***

Henriksen said that, as agreed at the last TMT meeting, representatives from the Corps' Walla Walla District, the Coast Guard and the Columbia River Towboat Association (CRTA) had done a site visit to some of the problem navigation areas in the Lower Snake River. This site visit resulted in a Corps Memorandum for Record outlining what was found; Ann Glassley of the Corps Walla Walla District went briefly through the memorandum, noting that no areas of navigational concern were found at the sites visited in Ice Harbor, Lower Monumental or Little Goose pools. One area of concern was found in Lower Granite pool, where some readings of less than 14 feet depth were found at the edges of the navigation channel. Other areas of known concern, where navigation channel depth readings are less than 14 feet, include the downstream approach to the Lower Monumental lock and the confluence of the Snake and Clearwater Rivers.

CRTA President Larry Johnson noted that the Towboat Association had subsequently developed a new request for pool elevation increases, dated April 15. This document makes the following recommendations:

- A comprehensive bottom survey of the Snake River navigation channel is necessary to determine the extent of shoaling through the system.
- For 2003, MOP+1 is essential to safely navigate the Snake River.
- It is unlikely that operation of the reservoirs at MOP+1 will be sufficient in the near future to ensure a 14-foot channel and adequate water over the sills at the navlocks.
- Stopping the spill at Lower Granite may be necessary to allow tows to safely depart the navlock.
- Three navigation aids (buoys) are needed at Steptoe Lower Range to mark the shoal area.
- Dredging of the Snake River must be completed to avoid the risk of an environmental catastrophe, protect the safety of the operators and crews navigating the system and to ensure the reliability and integrity of the supply chain.

The group devoted a lengthy discussion to this document, offering a series of clarifying questions and concerns. Both the Memorandum for Record on this issue and the April 15 CRTA operational request are available via hotlink from that agenda for today's meeting on the TMT homepage; please refer to these documents for further details.

Johnson noted that the pool elevation requested in the CRTA document are the same levels implemented in 2002. He went to the white board to illustrate what happens when down-bound tows try to "outrace" the current in order to maintain steerage way; this often results in the towboat and barges heading down the navigation channel at an angle, causing the bow and stern of the tow, which may be up to 640 feet long, to exceed the 250-foot-wide navigation channel. Another CRTA representative noted that the recent survey was done in the navigation channel only; just outside the channel, there are many areas where the depth is less than the 14 feet the CRTA is requesting for a minimum safe operating depth.

Reclamation's Tony Norris suggested that it might be possible to run the fill valves as the tow leaves the lock in order to minimize the effect of opening the lock gate; a Corps representative replied that, while that type of operation is not allowed under current Corps protocol, it may be something that could be investigated.

Carl Knaack of the Corps Walla Walla District noted in response to Point 1 of the CRTA recommendations that the Corps is planning to conduct a comprehensive bottom survey of the Snake River navigation channel this August. In response to a question from Boyce, Henriksen said Lower Granite, Little Goose, and Ice Harbor are currently being operated at MOP+1, Lower Monumental is operating at MOP.

Does operation of the Lower Granite RSW mitigate the spill problem cited by the CRTA at that project? Jim Litchfield asked. Yes, Chris Ross replied – when the RSW is operating, Lower Granite spills only 19 Kcfs. How long does it take for a barge to exit the navlock and clear the project? Bettin asked. It takes 10-15 minutes, Johnson replied. So if we stop spill at Lower Granite for 15 minutes as the barges exit, that would solve

the problem? Bettin asked. Yes, but it would also impact the RSW experimental design at Lower Granite, Steve Pettit replied.

The group discussed the ramifications of the CRTA's operational requests, including their impact on the RSW test and the logistics of simultaneously operating the lock and adjusting spill at Lower Granite during the evening hours, when only one operator is on duty. It was agreed that more information is needed from the project operators before this issue can be resolved. Pettit noted, however, that the test schedule is laid out in the spring/summer update to the 2003 Water Management Plan; if there is any flexibility in the towboat departure schedule, they could avoid problems by traversing Lower Granite Dam only on days when the RSW is being operated. Johnson said he will investigate that possibility. Another participant noted that, even on days when uncontrolled spill is occurring at the Lower Snake projects, a flat spill pattern across the face of the dam provides the best conditions for navigation.

Kyle Martin noted that the CRITFC tribes are strongly opposed to operating the Lower Snake projects outside of MOP. The BiOp specifies MOP operation, and particularly if the operating agencies propose moving to MOP+2 or +3, the tribes would call for NMFS to re-initiate consultation. Ross added that in the wake of the dredging court case, NMFS intends to re-initiate consultation on the dredging issue this winter. That would be a huge help, Johnson said.

Boyce said that, if the CRTA could provide specific log data showing where, when and at what pool elevation navigational problems occur, that would help the TMT optimize Lower Snake pool operations for both navigation and for fish. Johnson replied that the Towboat Association is unwilling to provide such log information unless required to do so by the Coast Guard, noting that the point of today's presentation is to share the CRTA membership's operational experience with this problem.

Boyce said that, in his view, the CRTA has not provided the data requested at the last TMT meeting to truly pinpoint the problem with MOP operation. That information won't really be available until the Corps survey is completed this August, Johnson replied. Travis Coley of the Coast Guard representative that there would legal consequences if the towboat companies were to voluntarily provide log information about groundings; that would be like going to a state policeman and telling him you routinely speed, he said, adding that companies could face financial penalties and could even lose their navigational licenses for some infractions.

Boyce noted that Oregon wants to stay as close to the requirements laid out in the Biological Opinion as possible; he reiterated his view that he still has not heard much hard data to support an excursion from the BiOp's MOP operation requirement. Henriksen revisited the findings of the Memorandum for Record, noting that it had confirmed some of the CRTA's claims. What we're trying to do is just get through this season, she said, in the hopes that there may be some movement on the dredging issue prior to the next migration season.

Moving on to the spill operation at John Day, Johnson said that, at 2:15 this morning, the Shaver tug *Cascades* requested an alternative spill pattern at John Day

because he judged the spill pattern to be too dangerous to navigate. The project operator replied that he was unable to alter the spill pattern except for Tidewater oil barges. We're here again, as we have been in past years, asking for the same thing we always do, Johnson said. It's my understanding that once total river flow reaches a certain level -- 300 Kcfs -- that change in spill pattern will be made, Henriksen replied. However, all barges, not just oil barges, have the same handling and maneuverability issues, Johnson said.

What is the specific request? Boyce asked. When certain spill and flow conditions have occurred in the past, safety can be an issue at John Day, Johnson replied; what we're asking for is when total river flow is 300 Kcfs or more, the Corps provide a flat spill pattern across the project; at flows of less than 300 Kcfs, we're requesting zero spill while the tows exit the locks. This is just during the lockage? Boyce asked. Yes, was the reply. Another CRTA participant noted that the exception used for Tidewater barges when flow is below 300 Kcfs -- zero spill while the barge exited the project -- worked very well for both navigation and fish attraction.

So at flows of less than 300 Kcfs, when you can't do a flat spill pattern, you're requesting zero spill for the 15-20 minutes the tows are passing the project? Boyce asked. That's correct, and a flat spill pattern when there is enough total river flow to allow it, was the reply. Boyce said his preference would be to go to a flat spill pattern at total river flows below 300 Kcfs. Pettit replied that it may not be feasible, logistically, to change the John Day spill pattern to a flat pattern in a timely enough fashion. The Corps' concern is that, at flows of less the 300 Kcfs, a flat pattern could redistribute the fish and contribute to egress problems, Rudd Turner added. And approximately how often do lockages occur at night this time of year? Boyce asked. Approximately five or six per night, Johnson replied.

After a few minutes of further discussion, Henriksen said the Corps will investigate the questions raised at today's meeting regarding how long it takes to change the spill settings at John Day, at what spill volume it becomes feasible to go to a flat spill pattern etc. She will then review those answers with the CRTA in the hopes of developing some potential solutions. And any changes to the BiOp spill program need to be coordinated with the salmon managers, Boyce added.

What do we do in the meantime, given the fact that total river flow is currently well below 300 Kcfs? -- I don't think we can wait another week to make a decision on this issue, Bettin said. Perhaps we can change the instruction to the lock operator such that he can change the spill operation if the tow boat captain feels the current pattern is hazardous to his tow, a CRTA representative suggested. As long as that does not result in a reduction in spill, Boyce replied. Henriksen reiterated that the Corps needs more time to answer some of the questions raised at today's meeting.

Ultimately, it was agreed that the captains of tow boats approaching John Day will radio ahead to indicate that a safety concern exists. Henriksen said she will attempt to answer the questions raised at today's meeting as soon as possible, and will communicate with the CRTA and the TMT membership by later today, if possible, to develop a consensus solution to the issue of what kind of spill will be provided at John

Day during lockages when river flows are less than 300 Kcfs. It was agreed that there may need to be a conference call on this issue prior to the next TMT meeting on April 23. And in the interim, we will continue to operate the Lower Snake pools at MOP+1, except at Lower Monumental which will continue to operate at MOP, Henriksen said.

### ***3. Water Management Plan (WMP) Update.***

Scott Boyd reported that the spring/summer update to the 2003 WMP is still in draft form; there are still a few additional items that need to be filled in. Boyd went briefly through the sections that have been added to the most recent draft of the update, including the research section requested by NMFS. He asked anyone with further comments on the draft to provide them to him as soon as possible. Boyd suggested that the TMT attempt to finalize the spring/summer update at its May 7 meeting; it was so agreed.

### ***4. Grand Coulee Flow Shaping in April.***

David Wills said the salmon managers have been discussing their preferred Grand Coulee operation this spring, and are in the process of developing an SOR formalizing their recommendations. Where we're headed is that, starting April 21, we would like the action agencies to begin ramping up Grand Coulee discharge to achieve the 135 Kcfs flow objective at Priest Rapids, Wills said; we would like Priest Rapids discharge to be at 135 Kcfs by April 24. We would then like the operating agencies to maintain that flow objective through the end of June, to the extent feasible, while also targeting Grand Coulee refill by June 30.

So the request will be to maintain the 135 Kcfs at Priest Rapids for as long as possible until we need to reduce Grand Coulee outflow in order to refill the project by June 30? Jim Litchfield asked. That's correct, Wills replied, although we will also be presenting information that shows that it should be possible to meet the 135 Kcfs flow target at Priest Rapids through June and still achieve refill at Grand Coulee. And what if it isn't possible to do both? Tony Norris asked -- which goal should take precedence? We're still talking about that, Boyce replied.

You're talking about a 135 Kcfs weekly average flow at Priest Rapids, not 135 Kcfs instantaneous flow? Bettin asked. That's correct, Ross replied, adding that, because the ramp-up is requested to begin on April 21, a Monday, week-average flows at Priest Rapids will be less than the 135 Kcfs target during the first week of this operation. And the following week the average flow should be 135 Kcfs or higher? Litchfield asked. That's correct, said Boyce. I think we're assuming about 110 Kcfs as a day-average at Priest Rapids on April 21, stepping up to 135 Kcfs as a day-average by April 24, Ross added. And there is no need for a TMT conference call on this issue unless there is a dramatic change in the flow situation? Silverberg asked. That's correct, was the reply.

### ***5. Fish Spill Status and Tracking.***

Laura Hamilton updated the TMT on average 12-hour and 24-hour TDG, spill and flow at various Lower Snake and Columbia River projects. She noted that there were

slight TDG exceedences at Ice Harbor on April 12 and at Lower Monumental and Ice Harbor on April 13. Hamilton said the Corps has begun tracking TDG exceedences by type, including, for example, exceedences that occur due to uncertainties when using best available judgement to apply the spill guidance procedure.

Ross said that, in looking at this information, NOAA Fisheries would suggest that Lower Monumental spill could probably be increased to 45 Kcfs. Hamilton replied that the Corps has some concerns about the fish screen design at Lower Monumental and the possibility of increased fish mortality at that project at higher spill volumes when river flows are low; currently, the spill parameters at that project are up to spill up to the gas cap, but spill is not to exceed 50% of total river flow. The group discussed the feasibility of highlighting periods in which the BiOp spill levels are not being met; Hamilton noted that it is virtually impossible to hit the BiOp spill levels exactly. Boyce said the salmon managers will attempt to track these low-spill periods themselves.

#### ***6. Lower Granite RSW Operations.***

Rudd Turner said the RSW test started at 6 a.m. Monday, April 14, with the RSW test condition. The Lower Granite total average spill volume has been running about 20.6 Kcfs during the RSW-on period, slightly higher than the 19.3 Kcfs estimated prior to the test. Ross noted that, according to the hourlyies, Lower Granite went to 19.3 Kcfs total spill during the last hour of this test block this morning, so perhaps whatever was causing that discrepancy has now been adjusted.

The test has now entered its second block, in which Lower Granite will not spill during the day, but will spill up to the gas cap for 12 hours at night for the next two days. The two-day RSW on/BiOp spill on test block operation will continue through May 28. Turner added that, under the current test design, the RSW is not operating during the BiOp spill test blocks. In response to a question from Silverberg, Turner said he will develop an email memo describing why the RSW test spill pattern has changed this year; Litchfield noted that, at a recent IT meeting, the USGS reported that the spill pattern used last year was creating egress problems for juvenile migrants.

#### ***7. Current System Conditions.***

Chris Carlson said that, given falling river temperatures, the current estimate of the end of Hanford Reach emergence is now April 27, rather than April 25. For the week of April 7-13, the average flow at Priest Rapids was 100.8 Kcfs; the flow band ranged between 40 Kcfs on April 8 to 20 Kcfs, where it is currently. The 30 Kcfs flow band was exceeded on April 7 and April 10. Field crews sampled 22 stranding areas during the week; they found 17 chinook zero mortalities.

Kyle Martin of CRITFC said his organization has been concerned about the precipitous drop in hourly flows at Priest Rapids on Friday; they were out on the reach on Friday and saw a lot of dead fish – perhaps as many as 100,000. Paul Hoffarth confirmed that stranded fish were found in over 50% of the sample sites WDFW field crews looked at on Saturday and Sunday. What was the reason for the significant deviation from the flow bands on the 8<sup>th</sup> and the 10<sup>th</sup>? Ron Boyce asked. It was the large volume of water

coming down the river after the weekend operation, primarily, Carlson replied – it isn't easy to maintain the flow bands when the flow coming downstream increases significantly in a short period.

Boyce said that, in his opinion, Grant County PUD needs to be doing a better job of staying within the flow bands; there were a record number of spawners last year, and the samples taken last week probably are indicative of significant losses. Is there anything Grant can be doing to improve their performance? Boyce asked. Carlson replied that this is not just a Grant County issue; there are other operators whose operations impact what Grant County is able to do. Carlson replied that the fish protection operation is not a requirement of Grant County PUD's license; they are voluntarily trying to meet the flow bands. There is a meeting on May 1 at Sea-Tac to discuss Vernita Bar/Hanford Reach operations; those interested in attending should contact Joe Lucas, Carlson added.

Any sense of what the numbers you saw last weekend mean in total fish losses? Boyce asked. We haven't been able to extrapolate that because of the limited number of random samples, Hoffarth replied; I would hesitate to impose any kind of expansion on the numbers we saw, but they were significant. Exactly – if you expand the numbers that were seen over the entire reach, the impact was probably very large, in terms of the number of juvenile fish killed, Boyce said. In response to a question from Scott Bettin, Hoffarth said WDFW is estimating that there are 30 million to 35 million juvenile chinook moving down through the Hanford Reach this year, approximately double the 10-year average.

My concern is that there are a lot of days between now and May 1, said Boyce – I would urge Grant County to do everything they can to avoid large sudden flow fluctuations that will strand these fish. Hoffarth added that, at the current low flows through the Hanford Reach, even small fluctuations in Priest Rapids flow can result in significant stranding. Carlson noted that Grant County had maintained somewhat higher weekend flows last weekend, attempting to target 80 Kcfs as the minimum weekend flow. Hoffarth noted that some additional flow from Grand Coulee would help this situation. Carlson said Grant County will continue to do whatever it can to minimize flow fluctuations from Priest Rapids and to stay within the agreed-upon flow bands.

Moving on to the status of the fish migration, beginning with adult passage, Boyce noted that nearly 79,000 spring chinook have passed Bonneville to date, compared to a 10-year average of just over 30,000 for this date. He added that nearly 8,000 spring chinook passed Bonneville on April 15 alone. I can remember some years when the total spring chinook run for the year was only 80,000 fish, Ross observed. Boyce added that the spring chinook run to the mouth of the Columbia was upgraded from 158,000 to 174,000 earlier this week.

With respect to juvenile passage, Ross provided information on chinook and steelhead smolt index numbers at Lower Granite, McNary, John Day and Bonneville. He said that, in general, juvenile passage indices have increased significantly at the Lower Snake and Lower Columbia projects in recent days. In other words, said Boyce, there are significant numbers of juveniles on the move throughout the system.

Boyce also provided information developed jointly by Oregon and Washington showing lower river chum and fall chinook captures in the Ives/Pierce Island areas in 2003, noting that this is one of the most successful spawning escapement years on record. Things are going fairly well in the chum arena, and we're pleased with how that's going to date, Boyce said. Do you have an estimated end of emergence? Bettin asked. Not yet, I'll keep you posted, Boyce replied. The reason I ask is that we're having some difficulty maintaining the 15-foot tailwater elevation at Bonneville during some hours when we're spilling 75 Kcfs, Bettin said. We'll watch that, said Boyce, but hopefully we'll start to see flows in the river coming up over the next few weeks.

Moving on to current reservoir operations, Norris reported that the current flow at Columbia Falls is exceeding 10 Kcfs; Hungry Horse has begun filling more rapidly – about three-quarters of a foot per day. The current elevation at the project is just under 3515 feet. Henriksen said Dworshak continues to release 16 Kcfs, and is operating for flood control – the current elevation at the project is 1577 feet and drafting slightly. Dworshak may be as low as 1565 feet by the end of April, she added, but will not meet its April 30 flood control target. She added that Libby continues to release 4 Kcfs; so far, no firm decision has been made about when a Libby sturgeon “pulsing” operation may be provided in 2003. In response to a question, Norris added that the current elevation at Grand Coulee is 1282.9 feet.

Henriksen added that the Corps did another Q-Adjust run last week, looking at Grand Coulee elevations if the 135 Kcfs week-average flow target was met at Priest Rapids through June, as well as a second run showing the effects of a ramping-up of Priest Rapids flow. According to this run, we're still looking at about 81 Kcfs as a seasonal average flow at Lower Granite, so little has changed there, Henriksen said. So we're close, but not quite up to, the threshold for spill at the Lower Snake collector dams? BPA's John Wellschlagler asked. Correct, Henriksen replied. Henriksen added that the most recent STP run, based on the most recent 10-day precipitation forecast, shows significantly less volume than last week's run -- 16.6 MAF at Lower Granite, for example, down from 17.1 MAF in last week's forecast.

#### ***8. New System Operational Requests.***

No new SORs were presented at today's meeting.

#### ***9. Recommended Operations.***

Recommended operations were covered during a previous agenda item.

#### ***10. Next TMT Meeting Date.***

The next Technical Management Team meeting was set for Wednesday, April 23 during next week's Lake Roosevelt Forum conference in Spokane. The next regular TMT meeting was set for May 7 (no meeting April 30 unless needed). Meeting summary prepared by Jeff Kuechle.