

TECHNICAL MANAGEMENT TEAM

BOR: Kim Fodrea\Pat McGrane

NMFS: Paul Wagner\Chris Ross BPA: Scott Bettin\Robyn MacKay

USFWS: Marv Yoshinaka\Bob Hallock\Susan Martin

OR: Chuck Tracy WA: Jim Nielsen ID: Ed Bowles\Steve Pettit MT: Jim Litchfield

COE: Cindy Henriksen\Rudd Turner

COLUMBIA RIVER REGIONAL FORUM

TECHNICAL MANAGEMENT TEAM

RE: JANUARY 12, 1999

FACILITATOR'S NOTES ON FUTURE ACTIONS

Facilitators: Jacqueline Abel and Brenda Brown

TECHNICAL MANAGEMENT TEAM

MEETING NOTES

JANUARY 12, 2000

CORPS OF ENGINEERS NORTHWESTERN DIVISION OFFICES – CUSTOM HOUSE

PORLAND, OREGON

DRAFT

Greeting and Introductions

The January 12, 2000 Technical Management Team meeting, held at the Custom House in Portland, Oregon, was chaired by Cindy Henriksen of COE and facilitated by Jacqueline Abel. 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.

Henriksen and Abel welcomed everyone to the meeting, then led a round of introductions and a review of the agenda.

1. TMT Guidelines.

Abel asked whether any of the TMT participants had updates about their discussions with their agencies' legal

staffs about the closed-meetings issue; Scott Bettin observed that it is his understanding that the TMT is no longer considering closing a portion of its weekly meetings. No TMT disagreement was raised to this statement. What about the suggestion that the weekly TMT meeting be shifted to Thursday mornings, and that new SORs would not be publically released or posted to the TMT homepage in advance of the weekly meeting? Abel asked – any concerns there? I talked to the IT about that last week, said Henriksen; they raised no objection to this proposed change in meeting schedule, if that's what the TMT decides to do. The feedback I got from the IT is that the change in the weekly meeting schedule shouldn't impose any major hardships, in terms of a Friday dispute resolution process; the consensus at last week's meeting was that they are willing to work around our schedule, Henriksen said.

Bettin said BPA is also willing to accommodate this suggested change in TMT meeting schedule, from a scheduling standpoint – we can still work with a Thursday TMT decision, as long as we have advance knowledge of what the SOR requests are going to be, he said. Will it also work for Bonneville if a dispute arises, and we don't get resolution until Friday? Abel asked. We're willing to take on that risk, Bettin replied.

Henriksen distributed copies of the most recent version of the TMT Guidelines, with all weekly scheduling items which might be impacted by the shift to Thursday morning meetings highlighted in italics. The group spent a few minutes going through this document, noting, among other things, that SORs would still be due on Tuesday, but would not be posted to the TMT homepage in advance of the meeting, that the TMT meeting would probably be scheduled for 9 a.m. to noon on Thursdays, and the IT dispute resolution process would likely shift to Friday. Abel added that it is her understanding that the IT would move its monthly meeting to another day – most likely Wednesday – to avoid scheduling conflicts with the weekly TMT meeting.

Ed Bowles and Jim Nielsen said they would have no problem with the proposed change in the TMT's weekly meeting schedule. Nielsen also mentioned that, for the 2000 calendar year, he and Marv Yoshinaka will serve as FPAC co-chairs, in alternating months.

The group also discussed the possibility of asking whether the IT could schedule any necessary dispute resolution conference calls for Thursday afternoon, rather than Friday morning; it was agreed that each TMT member will contact his or her IT representative to see whether or not this would be feasible.

With that, said Henriksen, I will go ahead and rework the Guidelines to incorporate these changes to the weekly TMT schedule. No objections were raised to this course of action.

Henriksen asked the other TMT participants to provide any updates they may have to their listed TMT representatives. You should probably take Ron Boyce's name off the Oregon representative list, said Chuck Tracy.

Henriksen noted that she has removed the references to the Executive Team on Pages 7 and 8 of the Guidelines, because that group is no longer active. No objections were raised to this change.

2. Decision-Making Criteria for TMT.

Abel said that, since the last TMT meeting, a number of participants sent in comments to the Corps on this subject; these comments have been compiled into a document, dated January 6, titled "TMT In-Season Management Criteria – Objectives and Triggers." Romeo Wisco also distributed copies of Reclamation's operating goals, objectives and triggers.

The Corps' Scott Boyd spent a few minutes going through the first document, which included the following specific goals:

Lower Columbia

- Increase survival of listed fish populations by providing suitable migrations conditions for all life phases of anadromous fish.

Mid-Columbia

- Increase survival of listed fish populations by providing suitable migrations conditions for all life phases of anadromous fish.
- Assure reservoirs are as full as possible at the start of the migration periods so natural runoff is used to increase river flows instead of filling empty reservoir space. Draft reservoirs as needed during the spring migration period to achieve flow objectives but place a higher priority on achieving reservoir refill by July 1 than meeting spring flow levels.

Libby

- Overall sturgeon goal for the Kootenai River is to restore natural recruitment to the Kootenai River white sturgeon population
- Provide suitable streamflows in the Kootenai River to recover Kootenai River white sturgeon.
- Provide a suitable streamflow regime for bull trout in the Kootenai and Flathead Rivers.

Lower Snake River

- Improve survival of listed fish populations by providing suitable migrations conditions for all life phases of anadromous fish (listed and unlisted).
- The overall goal is to recover listed stocks of anadromous salmonids in the Snake River Basin.
- To provide safe downstream passage for juvenile salmonids in a timely manner
- To provide timely upstream passage for adult salmonids
- To meet water quality standards in the Snake River.
- To optimize passage conditions for juvenile salmonids.
- To provide the best utilization of Idaho resources to benefit ESA stocks, resident species, and improve conditions associated with the Clean Water Act.
- To provide the best possible in-river migration conditions, given existing dam configurations and water availability limitations, and ensure a sensible balance, based on river conditions, between the number of fish transported and those allowed to migrate in the river.

The list of TMT in-season management criteria also includes specific objectives and triggers for each project in the system. This document is available on the TMT's Internet homepage; please consult this document for further details.

Reclamation's operating goals, as submitted by Wisco, include the following:

- Meet ESA obligations. Meet BiOp objectives and commitments per Record of Decision.
- Meet tribal treaty and trust responsibilities.
- Fulfil project operating requirements, authorizations and contractual commitments.
- Meet multi-purpose objectives. Achieve resident fish objectives to the fullest extent practicable.
- Dam safety, public safety, operating efficiency and flexibility.

The document also includes specific objectives and triggers for Grand Coulee, Hungry Horse and the Upper Snake projects.

The group devoted a lengthy discussion to these lists of goals, objectives and triggers, concentrating mainly on the Lower Snake and Reclamation projects. Much of this discussion was focused on flood control operations, and the need for the Corps to revisit the methodology by which those values are calculated, in order to increase the amount of water left in the storage reservoirs at the onset of the annual runoff season. Our predictive capabilities are much more sophisticated than they were when the flood control guidelines were initially developed, said Tracy; it is important for us to take a hard look at flood control operations, even if that means spreading the statistical risk. Bettin noted that flood control operations will be addressed in the 2000 Biological Opinion as part of the long-term solution. Henriksen added that, for the year 2000, she does not have the

authority to change the Corps' flood control elevations, or the methods used to calculate the seasonal evacuation strategies, but that those discussions are ongoing in other forums.

A variety of specific suggestions and wording changes were offered to the list of TMT in-season management criteria; Henriksen said she will compile the comments and suggestions made at today's meeting into a new version of this document, and will post this revised version on the TMT homepage. She asked that any additional comments be sent to her by next Wednesday, January 19; it was agreed that the discussion of in-season management criteria will continue at the January 26 TMT meeting. It was further agreed that Henriksen will develop a spinoff document, listing a simplified goal statement and priorities, highlighting the various alternative viewpoints on each item – in other words, showing where areas of agreement and disagreement exist.

Henriksen asked whether the other TMT members think it would be appropriate to include this list of in-season management criteria in the 2000 Water Management Plan; there was general agreement that this would probably be appropriate, once the list has been refined and finalized through further TMT discussion.

3. Recommended River Operations.

Bettin asked that the TMT receive a briefing on the results from the 1999 chum spawner surveys; Yoshinaka said he will check on the availability of those results, and will email whatever is available to the other TMT participants. Rudd Turner said the Corps has agreed to maintain the chum spawning operation outlined at the last TMT meeting (a minimum 150 Kcfs instantaneous discharge from Bonneville) until at least the next TMT meeting date, barring any severe weather-related reductions in natural river flow, if that is what the salmon managers would like to see. There was agreement among the salmon managers present that they would like to see this operation continue. Henriksen said she will coordinate a conference call if, unexpectedly, there is a change in weather conditions which will interfere with the Corps' ability to maintain 150 Kcfs from Bonneville in the next two weeks.

Henriksen then distributed a packet of predicted flow and reservoir elevation data, based on the recent National Weather Service early-bird forecast. We do these model runs every year, she explained, taking the early-bird forecast and shaping it for each of the 60 historic water years. We ran 60 model runs, in other words, all based on the volumes predicted for this year by the Weather Service, but each shaped a little differently. The intent is simply to provide an early snapshot of what kinds of water conditions we might see in the basin this year, she explained.

One notable thing, said Henriksen, is that, right now, the forecast Lower Snake River water supply is only about 86 percent of average. For that reason, she said, the spring and summer Snake River flow objectives are not at their maximum levels of 100 Kcfs and 55 Kcfs, respectively.

Henriksen asked whether the TMT would like the Corps to continue to provide updated versions of these model outputs each month; the reply was an overwhelming yes. Also, she said, in the past, we have included this type of outlook information in the annual Water Management Plan; would it be appropriate to do so again this year? There consensus of the group was that, while this is useful information, there is some question about whether or not it should be memorialized in the Water Management Plan. It was agreed that this question will likely be answered in the course of further discussion of the 2000 Water Management Plan and in-season management criteria.

Finally, Paul Wagner distributed a table showing a series of 10 suggested alternatives to model the temperature effects of various flow scenarios from Dworshak and Brownlee reservoirs. After a few minutes of discussion, the TMT requested that the Corps model Scenarios 1 and 2 (steady discharge from Dworshak, maximum use of Dworshak early in the season to keep beginning temperatures cool) or Scenarios 6 and 7 (evaluate the effects of Dworshak on water temperatures by keeping Dworshak outflows constant), prior to the next TMT meeting.

4. Next TMT Meeting Date and Agenda Items.

The next meeting of the Technical Management Team was set for Wednesday, January 26 from 10 a.m. to 3 p.m.

Additional TMT meetings were set for Tuesday, February 8 from 1-4 p.m. and Thursday, February 24, from 9 a.m. to noon. Meeting notes prepared by Jeff Kuechle, BPA contractor.

TMT ATTENDANCE LIST

JANUARY 12, 2000

Jacqueline Abel	Facilitator	503/282-5920
Scott Bettin	BPA	503/230-4573
Scott Boyd	COE	503/808-3943
Richelle Harding	D. Rohr & Associates	503/771-7754
Cindy Henriksen	COE	503/808-3945
Jim Litchfield	Consultant	503/222-9430
Chris Ross	NMFS	503/230-5416
Chuck Tracy	ODFW	503/872-5252 x2428
Glen Traeger	Avista Energy	509/495-4053
Rudd Turner	COE	503/808-3935
Paul Wagner	NMFS	503/2301-2316
Romeo Wisco	Reclamation	503/872-2803
Marv Yoshinaka	USFWS	360/696-7605
Nancy Yun	COE	503/808-3937

On Phone:

Name	Affiliation	Phone
Ed Bowles	IDFG	
Jim Nielsen	WDFW	
Craig Sprankle	Reclamation	

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COLUMBIA RIVER REGIONAL FORUM

TECHNICAL MANAGEMENT TEAM

RE: January 26, 2000 Meeting

FACILITATOR'S NOTES ON FUTURE ACTIONS

Facilitators: Donna Silverberg and Jacqueline Abel

The following is a list of items the Technical Management Team (TMT) discussed at its last meeting that will require future action or discussion.

TECHNICAL MANAGEMENT TEAM

MEETING NOTES

JANUARY 26, 2000

CORPS OF ENGINEERS NORTHWESTERN DIVISION OFFICES – CUSTOM HOUSE

PORLTAND, OREGON

DRAFT

TECHNICAL MANAGEMENT TEAM

BOR: Kim Fodrea\Pat McGrane

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Minutes & Facilitators Notes:

Comments on the prior meeting minutes are due Friday 1/28 at 5 p.m.

TMT Guidelines:

ACTION: Cindy agreed to look into the possibility of sending SOR's via email to all TMT members for discussion at the 2/8 meeting.

Decision-making Criteria:

Montana, Jim Litchfield reviewed Montana's comments. He pointed out that their primary interests are to reduce the impact of flow augmentation on Montana's reservoirs and streams as well as protecting the sturgeon population. He urged that TMT consider the upriver consequences of flow requests whenever possible. Jim agreed to send electronic copies of Montana's comments to all TMT members prior to the next meeting.

Flood Control and VARQ. The group expressed interest in continuing discussions about flexible ways of managing flood control to include VARQ.

ACTION: Jim Litchfield agreed to draft a memo requesting that whatever study is needed to review new possibilities

for flood control be done sooner than later to allow for a more transparent in-season management process. He will bring a copy of the memo to the 2/8 meeting for review and discussion by the group.

Hungry Horse: The group also thought more discussion on HH and how to balance bull trout and resident fish needs with down river fish is necessary.

ACTION: Kim Fodrea agreed to brief TMT on the latest results of HH studies at the 2/8 meeting.

Water Management Plan or Decision Criteria?

The group agreed to make as much progress with the decision criteria and weave that into the water management plan.

The decision criteria are proving useful as a means of seeing differences in approaches and opinions. They group agreed to do its best to resolve differences wherever possible, beginning with the issues that are pertinent to the water management plan. ACTION: The group agreed that they want the areas of agreement included in the next Water Management Plan as well as notice of areas of disagreement.

Consensus was reached that DWK and BRN need to be addressed by April 15th.

Lower Snake River Goals:

Consensus was reached on the language of the goals section to read as follows:

"The overarching goal is to recover listed stocks of anadromous salmonids in the Snake River Basin, to meet water quality standards in the Snake River and to optimize passage conditions for juvenile and adult salmonids. This will be done by providing the best utilization of resources to benefit anadromous & resident species, improve conditions associated with the Clean Water Act, and by recognizing federal treaty/trust responsibilities to the tribes."

Lower Snake River Objectives:

Paul and Ed agreed to merge Columns One and Two and present a revised draft by the 2/8 TMT meeting with a copy to Rudd by February 1st. Additionally they will review the trigger points and take a first cut at better linking the triggers to the objectives. The salmon managers will also be included in this discussion through FPAC.

Water Quality Team re: TMT:

Jim Litchfield raised the question of the Water Quality Team's role in in-season management related to gas and temperature issues. Cindy suggested that a process be developed to liaison TMT with WQT to get real time approvals. Donna will raise this issue at an upcoming Regional Forum Chair's meeting.

River Operations:

It was agreed to spill to 1999 levels until the Bi-Op 2000 parameters are released. At 150 kcfs, minimums can be maintained until the next meeting. If any emergency occurs below that, it was agreed that a TMT meeting would be called. A meeting will also be called if redds are de-watered at 150.

NMFS will be convening a meeting with researchers February 16th to review chum information gathered since last July. Jim N. will let TMT know of time and location.

Water Management Plan

It was agreed that The Water Management Plan will have to same format as last year with some streamlining. Kyle Martin reported that the tribes will be presenting their own Water Plan by late February. He agreed to try to have this plan available for the TMT meeting on February 24th.

Next Meetings:

The next meetings are scheduled for:

- Tuesday, February 8th 1- 4 without a facilitator or any Oregon reps.
- Thursday, February 24th 10 - 3 with a working lunch.

Proposed Agenda Items:

- Air Temperature and its effect on water temperature and fish (Scott and Paul).
- Decision-making criteria for TMT. Continue review of goals/objectives/triggers information.
- Water Management Plan—review outline & '99 Plan for substantive issues

TECHNICAL MANAGEMENT TEAM

MEETING NOTES

JANUARY 26, 2000

CORPS OF ENGINEERS NORTHWESTERN DIVISION OFFICES – CUSTOM HOUSE

PORLTAND, OREGON

DRAFT

Facilitators: Donna Silverberg and Jacqueline Abel

Henriksen and Abel welcomed everyone to the meeting, then led a round of introductions and a review of the agenda.

1. TMT Guidelines.

Henriksen said a new draft of the Guidelines is now available, dated January 26. Abel reminded the TMT participants that there was general agreement to move the weekly TMT meetings to Thursday mornings at 9 a.m., and that they had been asked to check on the feasibility of setting a standby dispute resolution conference call for 3 p.m. Thursdays – will that work, from the standpoint of briefing your agencies and IT representatives? Abel asked. There was general agreement that the 3 p.m. standing conference call appears to be workable.

The group spent a few minutes discussing the process for SOR submission in 2000; Henriksen said that, from the Corps' perspective, submission by fax is preferred. Robin MacKay said fax would be preferable for Bonneville as well; if the SORs are submitted by email, and the person receiving it is absent, or doesn't check his or her email promptly, that could cause a delay in the actual delivery of the SOR. The group also discussed who will receive copies of the SORs in advance of the weekly meeting – action agencies only? TMT members only? All TMT participants? After a few minutes of discussion, it was agreed that new SORs will be faxed to the action agencies, and emailed to the other TMT members, prior to each week's meeting. In addition, Henriksen said she will look into the possibility of setting up a TMT email inbox to receive electronic versions of each SOR for distribution to the other TMT members and for posting to the TMT homepage on Thursday mornings.

The group offered several minor corrections and changes to the Guidelines at today's meeting; Henriksen said she will incorporate them into the next draft of this document.

2. Decision-Making Criteria for TMT.

Henriksen distributed two versions of the "TMT In-Season Management Criteria – Objectives and Triggers" document discussed at the last TMT meeting. She explained that Version 1 contains everyone's comments except those from Montana, while Version 2 contains everyone's comments except those from the Bureau of Reclamation. We should probably discuss Montana's comments today, she said, as well as the final format everyone would like to see for this document.

Jim Litchfield spent a few minutes going through the Montana comments, explaining that the state's overall interest is in the impacts of lower river management activities on Montana reservoir elevations. This document is available via the TMT's Internet homepage; please refer to this document for details.

The basic concern we're trying to express here is the balance between lower river flows and reservoir impacts at the upstream storage facilities, and on streamflows for bull trout in Montana, Litchfield said. Brian Merotz is also concerned about the effects of the double peak in streamflows that occurs when water from the Montana storage reservoirs is released in late summer, he said.

The group spent a few minutes discussing the VARQ concept Montana is proposing be used to guide storage reservoir operations, and the potential impacts of VARQ operation on in-season operations. Ultimately, Henriksen said she has no authority to change flood control operations for 2000; she added that it is her understanding that discussion of VARQ implementation is taking place in other forums, and may be a part of the 2000 Biological Opinion.

The bottom line, for the purposes of developing the 2000 Water Management Plan, is that the Corps is not planning to make any changes to flood protection in the Columbia Basin, Henriksen said. Again, I don't have the authority to change the planned flood control operation at Grand Coulee such that VARQ could be implemented, she said. Still, it seems to me that we need to get this issue on someone's radar screen, said Litchfield. While the Corps and Reclamation flood control operations are pretty much carved in stone, there is some flexibility to fudge the flood control elevations slightly in-season, he said; perhaps we could consider using the VARQ concept to guide decisions about where flood control space should be prioritized.

The problem is, we have no way of knowing, at this point, what hydrologic conditions will be like in March or April, said Henriksen. You're saying there is no way we can have an advance understanding, between the Corps, Reclamation and TMT, about how flood control could be modified based on actual hydrologic conditions? Litchfield said. That's

correct, Henriksen replied.

CRITFC's Kyle Martin said that, if you look at the records from the past several years, the Corps is authorized to go a lot higher than the streamflows to which it has been regulating during the spring. Bank-full conditions at Vancouver are 450 Kcfs, but the Corps has been regulating to about 350 Kcfs, said Martin; those higher flows would really benefit fish. In the tribes' view, the Corps is being overly conservative in its flood control management – I just wanted to get that in the record, he said.

Ed Bowles observed that, every year, the Corps says it can't change its flood control operation because more study is needed. I would like to suggest that we call for the initiation of such a study now, he said. That may be one of the topics of discussion during the BiOp consultation process, said Henriksen. Perhaps we should ask those interested in having the Corps re-examine its flood control operations to talk to the people in their organizations who are involved in the consultation process, suggested Donna Silverberg. In addition, she asked Litchfield to draft a memo to the Corps, expressing the TMT's desire that whatever new studies are needed to investigate potential revisions to the federal operators' flood control policies and operations be conducted as soon as possible. Litchfield said he will do so. I'll bring that to the next TMT meeting, he said, and we can discuss what we want to do from there.

Litchfield continued on through Montana's comments, noting that the combination of bull trout operations, anadromous fish operations, minimum flows at Kerr and flood control makes Hungry Horse operations a particularly problematic issue for Montana in 2000 – that's an area of the Water Management Plan we'll probably need to have additional discussion on, he said. Kim Fodrea noted that she is working on some studies for the Salish-Kootenai Tribes; Montana Power, the State of Montana and others have also participated in those studies, she said. Obviously, there are a number of issues that need to be resolved, said Fodrea; we're trying to develop some solutions, but each of those entities has its own perspective on what the best operation might be. Fodrea said she will be presenting some study results to the Montana groups on February 1; at that point, hopefully, they will be able to come to agreement on the Hungry Horse operations they would like to see in 2000, so that they can be incorporated into the new BiOp. Silverberg suggested that Fodrea brief the group on the study results, as well as the outcome of the February 1 meeting, at the February 8 TMT meeting.

There were a variety of additional questions about the effects of the proposed VARQ and IRC operations on in-season management of the system; ultimately, Henriksen said the Corps is planning to re-model the expected shape of the runoff, based on the 60-year historic record, once the February final water supply forecast is received; if you could provide the Corps some technical input as to the specific scenarios you would like to have modeled, we could probably produce some "what-ifs" for 2000, she said.

Moving on, Litchfield said there is also some concern, in Montana, about Kootenai River sturgeon operations; he went briefly through Montana's comments on this issue. I'll discuss your comments with our sturgeon people, said Marv Yoshinaka, and the Fish and Wildlife Service will formulate a response. We should probably respond to your comments on bull trout as well, Yoshinaka said, adding that a Biological Opinion is being prepared on sturgeon and bull trout.

Jim Nielsen observed that many of Montana's comments would probably be more appropriately made to NMFS or the Federal Caucus, within the consultation process on the 2000 Biological Opinion. That's probably my fault, said Litchfield – I've encouraged Montana to avail themselves of every open door. In addition, he said, it isn't clear to me that we will have a signed BiOp in place prior to the start of the 2000 migration season. Water is going to start coming down the hill, he said, and before it does, Montana hopes to have a better understanding of how we're going to operate.

With that, the discussion moved on to Version 2 of the "TMT In-Season Management Criteria – Objectives and Triggers" document, which does not include Montana's comments. The Corps' Rudd Turner explained that what he had attempted to do in this document is to organize all of the comments received from Reclamation, the Fish and Wildlife Service, NMFS, Idaho and the Corps on the goals, objectives and triggers for each project. What I was hoping to do today, said Turner, is to go through this language and fine-tune it somewhat, particularly on the Lower Snake section.

Yoshinaka said he will probably need to talk to the other salmon managers before venturing substantive comments on the objectives and triggers for the Lower Snake projects; he said that conversation will take place during the next FPAC

meeting.

The other thing we need to talk about is the ultimate fate of this document, said Turner – at one point, we discussed folding it into the 2000 Water Management Plan. Various TMT members observed that this document functions more to highlight differences of opinion about specific management actions than it does to lay out agreed-upon courses of action that could be used to drive the actions in the 2000 Water Management Plan. This is hardly surprising, Litchfield observed; these are difficult issues, and it isn't realistic to expect that, after discussing these objectives and triggers for a meeting or two, we're all going to come to agreement. We need to have some more discussions about why our views on these issues are different, do some additional model runs to get better information and look at the most recent biological data to see if there might be a better way to manage the system than what we've done historically, he suggested. Perhaps what we should do, then, is look for areas where we can achieve consensus, and put those into the Water Management Plan, Silverberg said. We can then highlight the areas of disagreement, and work those over at future TMT meetings.

Henriksen expressed disappointment that the group had started down the path of developing objectives and triggers to provide as input to the 2000 Water Management Plan, but now appears to be headed away from that concept – it doesn't sound as though much, if any, of this document is likely to end up in the Water Management Plan this year, she said. Actually, I'm not hearing that the group feels as though this has no relevance to the Water Management Plan, Silverberg said – I'm hearing a general sense that it needs more work, to find out where the areas of consensus and disagreement lie.

It was agreed to try to make a start on this effort today. The group then spent a few minutes wordsmithing Version 2 of the Objectives and Triggers document, making a number of changes to the Lower Snake River goals and objectives sections. Turner said he will incorporate these changes, as well as Montana's comments, into a new version of this document prior to the February 8 TMT meeting. Paul Wagner agreed to wordsmith the "Objectives" column and provide his revisions to Turner for inclusion in the new draft.

The group discussed the ongoing debate over the timing of the Dworshak storage releases; Turner noted that, last summer, the TMT considered two options: first, the tribal proposal that a portion of that storage be retained for release after September 1, and second, the salmon managers' proposal that all of the Dworshak storage be released by August 31. Anticipating that the same debate will occur again in the summer of 2000, said Turner, I was hoping that we could come to agreement on a preferred strategy ahead of time this year, rather than continuing to debate it in-season. It was agreed that Wagner will also attempt to address this issue in his wordsmithing of the "Objectives" box, working with Ed Bowles.

Silverberg suggested that, between now and the next TMT meeting, the group review the Lower Snake River – Triggers" section, and provide any comments they may have about the consistency of those triggers with the changes to the "Goals" and "Objectives" sections agreed to at today's meeting to Rudd Turner as soon as possible.

3. Role of Water Quality Team in In-Season Management.

Jim Nielsen said it his understanding that, at its last two meetings, the Water Quality Team has been discussing their role in in-season management, particularly with respect to dissolved gas management. Apparently, they have determined that they will be making in-season recommendations with regard to dissolved gas, said Nielsen; I have some concern about potential conflicts between the TMT and the WQT. In the past, he said, the TMT has relied upon the WQT for technical input when specific questions have arisen; the responsibility for making in-season recommendations, however, has been vested in the TMT. I thought it would be worthwhile to have some TMT discussion of this issue, so that, hopefully, those conflicts can be avoided, he said.

After a few minutes of discussion, it was agreed to invite Mark Schneider and/or Mary Lou Soscia, the WQT co-chairs, to attend the next TMT meeting to discuss this issue, and the possibility of designating liaisons between the two committees to coordinate any real-time input or recommendations from the WQT.

4. Recommended River Operations.

During the winter period, said Abel, the TMT has been setting its operational recommendations from meeting to meeting. Are there any operational changes that need to be considered for the period between now and February 8? she asked.

With respect to Bonneville operations, said Henriksen, we are continuing to maintain 150 Kcfs minimum discharge from that project to the greatest extent possible; from the Corps' perspective, we do not foresee any difficulties in continuing with that operation through the February 8 TMT meeting. The lowest day-average flow we've seen at Bonneville since January 12 was 177 Kcfs, she said. Day-average flow projections between now and February 8 are in the 185 Kcfs-200 Kcfs range, added Turner. Kim Fodrea said Reclamation, too, anticipates no problem in using Grand Coulee to continue to meet the 150 Kcfs minimum flow at Bonneville.

Nielsen said FPAC is trying to schedule an update meeting with the researchers investigating chinook and chum salmon spawning below Bonneville on February 16, from 9 a.m. to noon at NMFS' Portland offices. He said he will send out a notice once that meeting date is confirmed, and invited any interested TMT participants to attend.

5. Flow System Scenario.

With respect to the status of the Corps' modeling of the temperature effects of various flow scenarios at Dworshak and Brownlee, Henriksen said the Corps has modeled Scenarios 6 and 7, but didn't like the results – we weren't comfortable that the way we modeled them was appropriate, she explained. Basically, we saw some strange results, and we would like to re-think our input data set, said Henriksen. The bottom line is that we are going to re-run those scenarios, and hope to have results to share at the next TMT meeting.

6. Other.

Henriksen asked what the TMT would like to do about the 2000 Water Management Plan; there was general agreement that the Corps should forge ahead with its development, using last year's "streamlined" format as the starting-point. With respect to the earlier discussion of objectives and trigger points, Litchfield suggested that, as consensus is reached on various sections, that language be incorporated into the 2000 WMP. If we can't reach consensus, he said, we'll include those sections as "grey areas," as we did last year. Henriksen noted that the 1999 Water Management Plan is available on the TMT's Internet homepage, as is the outline for the 2000 plan; between now and next meeting, the TMT participants were asked to review these two documents, and come to the February 8 meeting prepared to discuss the 2000 Water Management Plan.

Martin noted that CRITFC is putting together its own Water Management Plan for 2000; it is currently undergoing internal review, and may be available for discussion at the February 24 TMT meeting.

7. Next TMT Meeting Date and Agenda Items.

The next meeting of the Technical Management Team was set for Tuesday, February 8 from 1 p.m. to 4 p.m. The February 24 TMT meeting will run from 10 a.m. to 3 p.m. Meeting notes prepared by Jeff Kuechle, BPA contractor.

TMT ATTENDANCE LIST

JANUARY 26, 2000

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Kim Fodrea	Reclamation	503/872-2802

Cindy Henriksen	COE	503/808-3945
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Jim Litchfield	Consultant	503/222-9430
Jim Nielsen	WDFW	360/902-2812
Mike O'Bryant	Col. Basin Bulletin	503/281-9102
Chris Ross	NMFS	503/230-5416
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Glen Traeger	Avista Energy	509/495-4053
Rudd Turner	COE	503/808-3935
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Marv Yoshinaka	USFWS	360/696-7605

On Phone:

Name	Affiliation	Phone
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Robyn MacKay	BPA	
Kyle Martin	CRITFC	

TECHNICAL MANAGEMENT TEAM

BOR: *Kim Fodrea\Pat McGrane*

NMFS: *Paul Wagner\Chris Ross* BPA: *Scott Bettin\Robyn MacKay*

USFWS: *Marv Yoshinaka\Bob Hallock\Susan Martin*

OR: *Chuck Tracy WA: Jim Nielsen* ID: *Ed Bowles\Steve Pettit* MT: *Jim Litchfield*

COE: *Cindy Henriksen\Rudd Turner*

COLUMBIA RIVER REGIONAL FORUM

TECHNICAL MANAGEMENT TEAM

MEETING NOTES

February 8, 2000

CORPS OF ENGINEERS NORTHWESTERN DIVISION OFFICES – CUSTOM HOUSE

PORLAND, OREGON

DRAFT

Greeting and Introductions

The February 8 Technical Management Team meeting, held at the Custom House in Portland, Oregon, was chaired by Rudd Turner of COE. 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 Cindy Henriksen at 503/808-3945.

Turner welcomed everyone to the meeting, then led a round of introductions and a review of the agenda.

I. Review of Last TMT Minutes.

Turner noted that the notes from the last TMT meeting are now available via the TMT homepage; the group spent a few minutes reviewing their contents, after which Turner asked that any additional comments be provided to Cindy Henriksen by close of business Friday, February 11.

II. Air Temperature and Its Effects on Water, Temperature and Fish.

Turner said this agenda item is an outgrowth of Billy Connor's earlier presentation to the TMT; Scott Bettin said that, in the absence of Chris Ross, he would request that this agenda item be deferred until the next TMT meeting.

III. Preliminary Results and Discussion on Water Temperature Modeling of Dworshak and Brownlee.

Turner distributed a series of tables and graphs, showing the preliminary results of the requested Corps model runs of the temperature effects of various flow scenarios for Dworshak and Brownlee Dams in 2000. We have narrowed this

down to Scenarios 6 and 7, said Turner; we held Brownlee temperature constant, while varying Dworshak release temperatures. He noted that Nancy Yun did the actual model runs, and said anyone with technical questions should contact her directly.

Turner added that Dick Cassidy, formerly of the Corps' Portland District, has taken Bolyvong Tanovan's place as water quality team leader – we're pleased to get him, Turner said, because Dick is a very experienced guy. He will assume Bolyvong's former duties at the end of February, Turner added.

Continuing on, Turmer said that the ColTemp model the Corps used incorporated the 1999 water year and three weather years – above-average – hot (1984), average (1990) and below-average --cold (1985). In the base case, Nancy ran the model using the 1999 flow year, an initial temperature of 17 degrees at Lower Granite.

The next two pages show model input, Dworshak releases and elevations, Turner said, for Scenarios 6 and 7 and the base case. And the base case is...? Jim Litchfield asked. It's using actual 1999 flows and elevations as the initial case to run through the model, Yun replied.

The next page shows Brownlee results, said Turner; he noted that, for Brownlee, Scenarios 6 and 7 are the same.

In terms of actual model outputs, said Turner, these model runs tend to be a degree or two higher than actual conditions. He asked the TMT to peruse these results at their leisure, and to provide any feedback they may have in terms of the usefulness of this information. Kyle Martin noted that these results show that the peak, under scenario 6, is actually higher than the peak for scenario 6 under the average weather year.

Turner said that the results of these model runs are no real surprise; what they show, in general, is that if you hold the water back until August, you see an early temperature peak in mid-July, followed by a gradual decline in temperature; if you release the water early, beginning in early July, you avoid that early peak in temperatures, then see a steady rise throughout the month of August.

Paul Wagner noted that the majority of the juvenile run passes through by the end of July; clearly, he said, Scenario 6 would be of more benefit to adult migrants later in the season, while Scenario 7 would provide greater benefits for juvenile migrants.

That, of course, is the heart of the ongoing debate over the Dworshak releases, said Litchfield. That's true, said Wagner; this also confirms what previous data has indicated – that once the temperatures have risen to a certain point, it's very difficult to get them down again.

Would you like us to do some additional runs? Turner asked. Wagner said the scenarios that are of the greatest interest to him are 8, 9 and 10 – if you could put those all on one graph, that would be most illustrative, he said. Wagner added that Scenario 10 falls somewhere in between scenarios 6 and 7, and either it or Scenario 5 comes closest to Billy Connor's suggested management strategy.

Any interest in the earlier scenarios, where we would be manipulating Brownlee? Turner asked. After a few minutes of discussion, the TMT requested that the Corps model Scenarios 5, 8, 9 and 10, as well as a flexible strategy intended to mirror Connor's suggested approach.

Where is this conversation going, in terms of developing a management scenario for next year -- are you trying to use this tool to guide your management of Dworshak and Brownlee in-season? Michelle DeHart asked. Has this group decided that this management tool will be used to make in-season management decisions? she asked. It may, possibly, be one tool that is used, Turner replied – we were asked to develop a couple of model runs, and this agenda item is a technical discussion and presentation of those preliminary results. All we're doing today is looking for any additional model runs people would like to see, Turner said – that's as far as it's going at this point.

I have two questions, said DeHart – there is some question about whether NMFS's suggested biological approach has been endorsed by the region; there are also questions about whether or not ColTemp is the right model to use. The salmon managers will be discussing both questions at next week's FPAC meeting, Marv Yoshinaka observed. Scott

Bettin suggested that it would be helpful if Yoshinaka could report back on the outcome of those discussions at the next TMT meeting; it was so agreed.

Yun said Scenarios 5, 8, 9 and 10 will be no problem for the Corps to run; the additional "Connor" run will require some extra work. She said she will have at least Scenarios 5, 8, 9 and 10 modeled prior to the next TMT meeting.

IV. Decision-Making Criteria for TMT.

Turner said the current draft of the "TMT In-Season Management Criteria – Objectives and Triggers" document, dated February 2, is now available from the TMT's Internet homepage; NMFS has sent in some additional comments which have not yet been incorporated in this draft. Ed Bowles noted that he has sent in some Idaho comments on this document; Turner said he has not yet received them. Bowles said he will re-fax Idaho's comments before the end of today's meeting.

What's the deadline for comments on this new draft? DeHart asked. By the next TMT meeting, Turner replied.

Turner directed the TMT's attention to the revised Lower Snake River goal statement, the subject of the majority of the discussion at the last TMT meeting:

"The overarching goal is to recover listed stocks of anadromous salmonids in the Snake River Basin by optimizing passage conditions for juvenile and adult salmonids, and by meeting water quality standards in the Snake River. This will be achieved by providing the best utilization of Snake River Basin resources to benefit anadromous and resident species, and improve conditions associated with the Clean Water Act, while recognizing trust responsibilities to Native American tribes."

This, at least, was our recollection of what was agreed to last week, Turner said; no TMT objections were raised to this goal statement as written.

Wagner then spent a few minutes going through the revisions to the "Objectives" section, noting that the first three objectives are essentially one – the concept is to set up the system in the spring, draft reservoirs as needed for fish movement and to meet target flows in the spring, and shape flood control releases into the early April period to the greatest extent possible. Wagner spent a few minutes going through the other objectives; please refer to the most recent draft of the "Objectives and Triggers" document for details.

One thing we need to talk about is how, or whether, modeling techniques actually tell us anything about biological benefits, said DeHart – you're making some large assumptions about the application of that model to benefits. I agree completely, Wagner replied. I'm just concerned, because the issue of actual biological benefits goes a lot farther than this model does – it's much more complex, said DeHart. Again, I agree with your comment, Wagner said.

The group then spent a few minutes going through Idaho's revisions to the "Lower Snake River Objectives." There are only a couple of substantial differences, said Bowles -- the fifth point, relating to flow targets, and the sixth point, regarding refill probability and the relative priority of refill vs. flow augmentation.

This is quite different in its intent, at least during the spring period, said Litchfield. How do you suggest we set priorities for juvenile versus adult migrants? Our preference, rather than relying on models, would be to reserve perhaps 200 KAF of Dworshak water for use on adults in the fall, to see what that will do for us, Bowles replied – my guess is that that would give us a pretty good bang for our buck.

Is someone you know of designing a summer spill test for this year? Turner asked. It has been discussed in an ad-hoc fashion; I know several entities are considering it, Bowles replied. It's getting a little late to get something into the Corps' program for this year, said Turner. What's the deadline? Bowles asked. AFEP has already finalized its study reviews for the year, and I know the funding is pretty well spoken for – I can give you some contacts, if you like, Turner replied. I'll have Steve Pettit put this on the next FPAC agenda, and see how quickly they can develop a one-page summary, said Bowles.

Jim's point is a good one, said Turner – there are some differences here. We need to decide what our strategies will be. He asked Yoshinaka whether FPAC is still planning to develop language for this section; Yoshinaka replied that they are.

What's the fallback, if TMT can't come to agreement on this? DeHart asked. For the Corps, it's to operate as per the Biological Opinion, Turner replied. We could also elevate these issues to the IT, if they can be framed properly, said Bettin. The issues are definitely taking shape, Yoshinaka agreed; they're pretty much the same ones we've been discussing for the past several years.

After a few minutes of additional discussion, DeHart noted that Oregon and Washington have not yet seen Idaho's comments. Bowles said he would like to discuss these comments at the next FPAC meeting; tribal input would be helpful as well, he said.

We have some heavy lifting to do, to avoid some of the week-to-week debate over these issues we've had over the past several years, said Litchfield. It would be very helpful if FPAC could get down into some of the details of these conflicting objectives, and provide their recommendation to TMT, he said; we need to have a clear understanding of whether refill, or meeting the spring flow objective, is the highest operational objective, if we are to make effective weekly decisions in-season, he said.

Turner noted that, at last week's meeting, there was a question about VARQ; Ron McKown and Dave Ponganis have offered to come to the next TMT meeting to brief the group on what's happening on the VARQ front, he said. There was general TMT agreement that this would be very helpful; we'll include that as an agenda item for next time, Turner said.

With respect to the NMFS/Idaho "objectives" language, what's the next step? Turner asked. I will present it with FPAC – we need to discuss it, Yoshinaka replied. In response to a question from Bowles, Yoshinaka said the next FPAC meeting is scheduled for February 15.

The discussion then moved on to the letter, developed by Litchfield, in response to an assignment at last week's TMT meeting. As the topic of the letter is VARQ, said Litchfield, we may want to talk about it further and revise it following the presentation at the next TMT meeting. In response to a question, Litchfield said the intent is to send this letter to the action agencies for their consideration in 2000 operations; basically, it's an issue that needs to get off dead-center, Litchfield said -- I don't know that a letter will do a lot of good, but it's worth a shot, if it helps get this issue some attention. In response to a question, Bettin said VARQ is already being addressed in the BiOp consultation process.

Ultimately, both Kim Fodrea and Turner said they would not be able to sign this letter, because their agencies have not yet endorsed the VARQ concept. It might be more appropriate for the letter to come from FPAC, Litchfield said.

Turner asked that any comments on the letter be provided to Litchfield by February 21; it was so agreed.

V. 2000 Water Management Plan.

This item was placed on today's agenda to stimulate discussion of any issues that may need to go to the IT this year, Turner said; we would also like to get any comments you may have on the draft Water Management Plan outline. Scott Boyd noted that this document is still in fairly primitive form; he said will be working to refine it over the next several weeks.

Is this overall format still useful, and should we continue to use it in 2000? Turner asked. Also, the Corps continues to feel that developing goals, objectives and triggers for inclusion in this year's Water Management Plan would be very helpful. As we did last year, he added, we can place any unresolved or "grey" areas into an appendix to this plan.

In response to a question from Wagner, Yun said the 2000 Dissolved Gas Management Plan is now essentially complete, and available via the TMT's Internet homepage.

Comments? Turner asked. Shall the Corps continue along the current path, or does the group want to do something

different in 2000? There was general agreement that the Corps should continue in its current direction, using the 1999 WMP format as the basis for the 2000 Water Management Plan and continuing to develop objectives and triggers for inclusion, as well as updating the data that will appear in the plan. We will continue to work on it, and will provide an updated version prior to the next TMT meeting, Turner said. It was further agreed that, at the next TMT meeting, the discussion of the "Objectives and Triggers" document will commence with Lower Snake River triggers, and will progress from there to Upper Columbia section. It probably makes sense to work from the top down, said Litchfield – that's how the water flows.

VI. Recommended River Operation.

Each TMT meeting, we briefly discuss the ongoing operation to protect spawning areas below Bonneville, said Turner; last meeting, the Corps agreed to continue to attempt to maintain 150 Kcfs instantaneous minimum discharge from Bonneville. We can probably continue that operation through next meeting, if that's the group's desire, said Turner. Actually, the agreement was that we will continue to maintain that operation through emergence, said Yoshinaka; ODFW now has some data showing that emergence has now begun. In response to a question, Yoshinaka said there is evidence that shows that, in some years, emergence continues through the end of May.

Is 150 Kcfs still the recommended flow level? Turner asked. Bettin asked what the highest redd elevation is, noting that there is some evidence that it may not be necessary to maintain 150 Kcfs to water all of the redds. Yoshinaka said he will check on the results from last week's field surveys, and will report back at the next TMT meeting. He noted that there will be an informational meeting on February 16, beginning at 9 a.m. at NMFS' Portland offices, at which ODFW, Battelle Northwest and USFWS will share information from the 1999 spawner survey work.

In the meantime, there was general agreement that the action agencies will maintain 150 Kcfs instantaneous discharge from Bonneville, if weather conditions allow.

VII. Utilities' Response to Weekly Coordination Schedule.

Dennis Rohr said that, from the perspective of the Mid-Columbia PUDs, the proposed changes to the TMT Guidelines raise more questions than answers. To cut to the chase, he said, we have concerns about a situation where someone would be getting information on one day, while we wouldn't get that same information until a couple of days later. Bonneville has agreed to sit down and discuss it with us a couple of days from now, he said; I came today to ask that no action be taken on this item until the next TMT meeting. The changes to the Guidelines haven't been officially approved yet, said Turner, but Cindy Henriksen is planning to go to the Thursday IT meeting and provide a favorable report on these proposed changes. However, the SOR situation isn't yet a done deal, said Bettin, because of these and other concerns.

PGE would like to second what's already been said, said Kevin Nordt – we're looking forward to meeting with Bonneville, and want to make sure that we have an opportunity to be heard before the IT takes action. Have you written down your concerns, so that we can take a look at them? DeHart asked. No, Rohr replied. Can the TMT participate in your meeting with Bonneville? Yoshinaka asked. Probably not, Rohr replied – we would prefer to keep the meeting to a manageable size, and have an opportunity to speak directly to Bonneville.

Can you explain why you guys attend the weekly TMT meetings? Bettin asked. We have a financial interest in how you run the system – it's an educational thing, Sean Cradell replied. We echo those remarks; we're also a major shareholder in five of the federal projects, said Nordt. We want to know what's coming downriver, said Richelle Harding. Also, it's in our interest to understand how the system is operated week to week, said Glenn Traeger – you guys are the heart and soul of how the system is operated.

Thank you, said Turner – I'm sure the discussion of this issue will continue.

VIII. Other.

A. Hungry Horse Study Results. Kim Fodrea said several groups in Montana – the Salish-Kootenai Tribes, Montana Power and the State of Montana among them, would like to influence what goes into the 2000 BiOp; to that end, they

asked Reclamation to model several potential operational scenarios. She distributed a handout, showing some of these model results, and said she can provide full and extensive information in electronic form to anyone who is interested.

Fodrea spent a few minutes going through the main features of each scenario, some 30 in all. She also provided results as to how many years, in the 50-year historic record, that each scenario would meet refill and minimum flow requirements. She said Michael Newsome, who is working on the BiOp, came up with a proposed operation that was inserted in that process – basically, to fix Hungry Horse operations to focus on the VAR-Q elevations, with a five-foot draft in July and another five-foot draft in August for flow augmentation. He also proposed eliminating the Columbia Falls minimum flow, she said.

Michael brought that up at the BiOp work group meeting, then presented it to the Montana parties, said Fodrea; they liked some facets of Newsome's proposed operation, but changed others -- their big concern up there is smoothing out flows, and if you start drafting in mid-July, that would really jerk flows around, Fodrea said. The Montana groups would prefer to start the flow augmentation draft in August, with another five-foot draft in September.

Fodrea continued on through her handout, noting that the second-to-the-last page shows her analysis of how well each scenario does in meeting the relevant flow and reservoir elevation criteria. She then went to the computer and showed several examples of her model outputs.

B. John Day Spill Test. Starting this Saturday, February 12, we will be running a series of controlled spillway and powerhouse discharges from John Day, to evaluate gas levels, the effectiveness of the current flow deflector installation, and whether or not the end-bay flow deflectors are needed, said Turner. The test will last for eight days, and will cover 16 different conditions. Turner went through the various flow, spill and elevation conditions that will be tested, then provided some details about an upcoming site visit to observe during the spill test on Saturday, February 19, from noon to 3 p.m.; he asked anyone interested in attending to let him know by Tuesday, February 15.

C. Montana Letter. This agenda item was discussed previously

IX. Next TMT Meeting and Agenda Items.

The next Technical Management Team meeting was set for Thursday, February 24. Meeting notes prepared by Jeff Kuechle, BPA contractor.

TMT ATTENDANCE LIST

FEBRUARY 8, 2000

JANUARY 26, 2000

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Kevin Nordt	PGE	503/464-7240
Dennis Rohr	D. Rohr & Associates	253-549-4370
Cindy Tatham	Enron	503/464-7961
Glen Traeger	Avista Energy	509/495-4053
Rudd Turner	COE	503/808-3935
Paul Wagner	NMFS	503/2301-2316
Marv Yoshinaka	USFWS	360/696-7605

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Michele DeHart	Fish Passage Center	
Luis Pandel	Hasland Energy Trading	

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NMFS: *Paul Wagner\Chris Ross* BPA: *Scott Bettin\Robyn MacKay*

USFWS: *Marv Yoshinaka\Bob Hallock\Susan Martin*

OR: *Chuck Tracy WA: Jim Nielsen* ID: *Ed Bowles\Steve Pettit* MT: *Jim Litchfield*

COE: *Cindy Henriksen\Rudd Turner*

COLUMBIA RIVER REGIONAL FORUM

TECHNICAL MANAGEMENT TEAM

MEETING NOTES

February 24, 2000

CORPS OF ENGINEERS NORTHWESTERN DIVISION OFFICES – CUSTOM HOUSE

PORLAND, OREGON

DRAFT

I. Greeting and Introductions

The February 24 Technical Management Team meeting, held at the Custom House in Portland, Oregon, was chaired by Cindy Henriksen of COE 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.

Silverberg welcomed everyone to the meeting, then led a round of introductions and a review of the agenda.

II. Review of Last TMT Minutes.

Rudd Turner reviewed the highlights of the last TMT meeting; Silverberg noted that the minutes from this meeting are now available, and asked that any comments be submitted to Henriksen by close of business Friday, February 25.

III. Air Temperature and Its Effects on Water, Temperature and Fish.

This agenda item was deferred until next meeting.

IV. Discussion of Results from Water Temperature Modeling of Dworshak and Brownlee Summer Releases.

Turner distributed a set of runs from the Corps' COLTEMP model, showing the effects on water temperature of a series of operational scenarios. As you'll recall, he said, at the last TMT meeting, we shared the results of modeling Scenarios 6 and 7; there was some interest, on the TMT's part, in having the Corps run some additional scenarios as well – Scenarios 5, 8, 9 and 10. Turner added that, as was the case with the two model runs from last meeting, Scenarios 5, 8, 9 and 10 were run using the 1990 water year for average weather conditions, 1984 for above-average conditions and 1985 for below-average conditions.

Turner spent a few minutes going through the results of these model runs; he noted that Scenario 7, in which Dworshak is releasing 20 Kcfs beginning the first week in July, remains the outlier, in terms of temperature results. Under this scenario, the initially-cool river temperatures warm steadily into September. The other scenarios, to a greater or lesser extent, show rapid warming in the early part of the season, with water temperatures peaking in the third or fourth week in July, then gradually declining, in most cases with a lesser temperature peak some time in early to mid-August. Henriksen reminded the TMT that these model runs are intended to show temperature trends, and should not be considered an exact prediction of the water temperatures that would result from these operational scenarios.

Turner added that it may be possible to develop a potentially-useful in-season management tool by plugging actual water supply, temperature and operational and weather data into this model. Once we get into late June, he said, we'll have a pretty good sense of the actual water supply and the shape of the runoff, and we ought to be able to develop some fairly accurate projections of the effects of various operational scenarios.

So how do we make this useful, in-season? Silverberg asked. These runs don't give us a prescription as to how to operate Dworshak and Brownlee, Wagner replied; however, they do reinforce the value of using these reservoirs at different times and in different quantities – it's pretty apparent that we can influence river temperatures through skillful reservoir management. What makes this complicated, of course, is the disagreement, among the TMT membership, about which operational strategy will produce the most biological benefit, he said.

The group spent a few minutes discussing possible operational "trigger points," in terms of water temperatures at Hells Canyon and Lower Granite. If we could come to agreement on those, said Jim Litchfield, it seems to me that we could then use real-time water supply and fish movement information, plus these model runs, as the basis for deciding whether or not we need to maximize Dworshak discharge early in the season, or go to a more gradual release strategy. That would get us a lot closer to a process that would allow us to make decisions with a specific expected outcome, Wagner agreed. I agree, said Marv Yoshinaka, but we would need to monitor that fish movement data closely.

My only request is that we try to come to agreement on those trigger points sooner than, say, July 7, Henriksen said. She asked Steve Pettit whether Idaho had anything to add on this topic; Pettit replied that, as he has stated previously, Idaho would prefer that, whatever operational scenario is chosen, approximately 200 KAF of Dworshak storage be left in the reservoir for release after September 1. Second, he said, I'm a little nervous about establishing temperature triggers; I would prefer to watch the biological information, and let the fish tell us what to do.

We talked about this at last week's FPAC meeting, added Yoshinaka; the general feeling was that we're unsure whether we're at the point yet, in terms of information and predictive capability, where we could establish valid temperature triggers. FPAC's preference would be to consider the physical and biological data in-season, and discuss them weekly, as we've always done, rather than relying on automatic triggers, he said.

What I was suggesting is that, if we could establish some clarity about what our objectives are, and what the highest-valued use of the available storage water is, we would then establish certain parameters that would motivate action, said Litchfield – basically, if we get outside those parameters, then we need to do something, although what that "something" is would be up to the TMT to decide. Part of the discussion at FPAC had to do whether or not temperature is the only trigger that should be used, said Margaret Filardo – I think there was general agreement that temperature is one important piece, but there are many other items of information that would need to be factored into the decision-making process. One of those informational items, which it would be very valuable to have in 2000, is in-season data on Snake River temperatures below Hells Canyon, Filardo added. It would also be helpful if we could get a sense of conditions farther down the system, at Ice Harbor, particularly for our management of adults, said Chuck Tracy.

Paul Wagner of NMFS then distributed a set of results for the same 10 operational scenarios, run on John Yearsley's one-dimensional thermal energy budget model, rather than the COLTEMP model. In general, the results are pretty similar, between the two models, Wagner said. Getting to Chuck's point, however, Yearsley's runs do include information on Ice Harbor temperatures, Wagner added. Henriksen said the COLTEMP model can produce data on Ice Harbor as well, if the TMT is interested.

The TMT spent a few minutes discussing this information; ultimately, Wagner suggested that he ask Yearsley to attend a future TMT meeting to make a presentation on this model. In response to a question from Robyn MacKay, Wagner said it is his understanding that Yearsley used 1995 as his base-case input.

The bottom line is that both models show similar trends in water temperature from these various release strategies, said Wagner; they also show that we can significantly influence Snake River water temperatures through the cold-water releases from Dworshak. The strategy of how that water is used, obviously, is what the TMT needs to continue to discuss, Silverberg observed. There was general agreement that the true period of interest, for modeling purposes, is July 1- September 15; also, that the TMT is interested in having John Yearsley attend the next TMT meeting.

Any further assignments, in terms of additional modeling work the TMT would like for next meeting? Turner asked. Ice Harbor added, was the reply.

V. Update on Flood Control and VARQ Evaluations.

The Corps' Dave Ponganis was asked to describe the current status of the VARQ consultations. In general, he said, as part of the FCRPS consultation, the Corps, in its Biological Assessment, identified some of the studies the Corps has done on VARQ. In the course of those studies, one of the issues that has arisen is the impact on Grand Coulee and Lake Roosevelt of the shift in location of flood control storage space. Basically, that is a concern to the tribes and local residents around Grand Coulee, Ponganis said; there is some question about whether we want to proceed with further VARQ studies until the tribes have been consulted about the potential Grand Coulee impacts.

If the tribes are willing to accept those impacts, he continued, there are still several things which will need to occur before VARQ could be implemented. One is coordination with Canada; another is potential NEPA documentation. The bottom line, said Ponganis, is that VARQ isn't something that could be implemented tomorrow, even if the tribal concerns can be satisfied.

Kim Fodrea added that Romeo Wisco is in the process of continuing to pull together all of the studies that have been done on VARQ; she said that, yesterday, she had attempted to develop an estimate of the impacts of VARQ on Grand Coulee operations if it was implemented this year, and came away with more questions than answers.

The other part of this discussion is the consultation process, Ponganis said; there is some question about how VARQ might impact the winter chum spawning operation in the lower river. In other words, said Ponganis, it's not just a question of local impacts – we would also need to consult on the impacts of VARQ on winter operations.

Do you have a schedule for consultations with the tribes and local residents around Lake Roosevelt? Marv Yoshinaka asked. The Corps isn't the entity that is proposing VARQ, Ponganis replied – as per the 1995 BiOp, we've just been looking at this as a potential operation. My understanding is that USWFS and NMFS have started discussions with the Colvilles and other area interests, he said, but the Corps wasn't party to those.

What are the issues that would need to be coordinated with Canada? Wagner asked. Basically, it would be another potential change to Libby operations, which the Canadians would need to plan around, Henriksen replied. The Libby Coordination Agreement was signed only last week, she said, and that requires that we negotiate any major operational changes at that project with the Canadian interests. In response to a question from Wagner, Henriksen said VARQ implementation would result in an increase in spring and summer elevations at Kootenai Lake, which is one of the items that would require negotiation.

This is frustrating, said Litchfield, because there are a lot of people who have been through the studies, are convinced that VARQ is a smarter flood control operation, and that it can be implemented without putting a big hole in Grand Coulee. Ponganis explained that the Corps has analyzed VARQ from the standpoint of zero change to the flood control protection afforded Portland and the local area around Grand Coulee; as most of you are aware, he said, under VARQ, Libby and Hungry Horse, in most cases, would be held at a higher elevation going into the spring runoff period, and to provide the same level of flood control protection, that means Lake Roosevelt would need to be at a lower elevation. It's not a one-to-one correspondence, he said, and how much lower Lake Roosevelt would need to be in a given year is hard to determine.

I guess the real question is how much, and in how many years, would we need to draft Grand Coulee below its current flood control elevation? said Litchfield. If it's an additional five feet every year, I can understand why the local residents might be upset. But if it's just a few inches, that's a different matter. Until some analysis is put on the table, all we're going to hear is everyone's worst fears, he said. Henriksen noted that the Corps' VARQ report might help to answer some of Litchfield's technical questions; she offered to provide him a copy during today's lunch break.

The frustration is that my clients all feel that there is value in the VARQ concept, and every year, they're told, "We can't implement it this year, we need some further analysis," said Litchfield. The action agencies need to make a decision about whether or not VARQ is a viable operating strategy, and if it isn't, they need to say so, Litchfield said. I'm not trying to tell you that VARQ is the way you need to go, he said – I'm just saying that you need to tell its advocates yes or no.

After a few minutes of further discussion, Ponganis said the Corps is moving toward a decision about whether or not VARQ is a viable operational alternative; it is a part of the consultation process, and it is included in one of the hydroreg runs. NMFS and the Fish and Wildlife Service believe VARQ offers benefits to fish and wildlife, and we're certainly willing to consider it, he said. Montana will provide its input in the consultation process, then, said Litchfield. It was further agreed to ask Peter Brooks to provide an overview of flood control operations at an upcoming TMT meeting, including a comparison between normal and VARQ operations, if possible. I'm not sure anyone has modeled the latter piece, since VARQ isn't on the table for this year, but I can ask, said Henriksen.

VI. Decision-Making Criteria for TMT.

Wagner distributed a list of Lower Snake River objectives, developed at and following the last TMT meeting. As you'll recall, Wagner said, at that meeting, Ed Bowles discussed a modified version of this document, and there were several areas of disagreement – some minor, some more problematic. We subsequently discussed these issues, and the criteria, at the weekly FPAC meeting; the result of those discussions is this revised list of Lower Snake River objectives, he said.

Wagner spent a few minutes going through this document. With respect to the objective reading "Shift flood control releases to the maximum extent possible to benefit fish migration and shape flood control and spring runoff to the maximum extent possible into the juvenile migration season which begins early to mid-April," Henriksen noted that this is an issue that should probably be dealt with in the BiOp consultation process; as always, she said, changing the timing of the flood control releases is an issue for the Corps. Robyn MacKay added the concern that shifting system flood control operations to Grand Coulee would mean that project's elevation would be lower heading into the fish passage season; with the steelhead listing, she said, doesn't that mean there would be less water available for that species? Yes, it does, Wagner replied – FPAC is aware that shifting flood control would have a cost.

Moving on, Wagner noted that the objective "Strive to ensure flows do not drop below 100 Kcfs at Lower Granite during the spring migration season" has changed; originally, I had 85 Kcfs here, Wagner said, but the bottom line is that more flow would be better, if it can be provided. Whether or not that 100 Kcfs at Lower Granite should be mandatory, however, would require some very extensive discussions, at TMT and elsewhere, Wagner added. So you're emphasizing the word "strive?" Litchfield asked. That's correct, Wagner replied.

The next addition is the objective "Utilize in-season management, based on the needs of fish, to balance reservoir refill in June with helping maintain springtime flows at Lower Granite," Wagner said; again, this is a concept we could debate forever, but the idea here is simply to recognize that there is a balance between spring flow augmentation and

refill. Frankly, Wagner said, I doubt the TMT can reach consensus on some sort of hard-wired refill/flow augmentation operation; for that reason, it will continue to be an in-season decision, based on available water supply and the needs of fish.

The next objective, "Maximize juvenile spillway passage at the Lower Snake River dams by spilling to the full extent allowed by state standards during the spring migration period. Begin spill testing for summer migrants," is also new, Wagner said; it was an Idaho addition. These concepts are being discussed in the BiOp consultation process, and hopefully will be resolved there, he said. Does "maximize juvenile spillway passage" mean continuous spill to 120% TDG at all four collector projects? Turner asked. That's how I would read this, yes, Wagner replied.

Wagner continued on through the list of Lower Snake objectives; he noted that "Utilize Brownlee reservoir to augment summer flow and shape BOR's Upper Snake water to the maximum extent possible early in the summer season when Brownlee water temperatures are still cool and before Lower Snake River water temperatures become critical" is new. With respect to "Utilize Dworshak as a source of augmentation water during the summer migration season to provide both temperature and flow benefits," what this basically says is temperature first, flow second, Wagner said.

The last bullet on this page, "Utilize Dworshak as a source of augmentation water during the summer *and fall* migration season to provide both temperature and flow benefits to listed juvenile *and adult salmon and steelhead*," is one on which there is still some disagreement, Wagner said. NMFS has yet to be convinced that saving some portion of the Dworshak storage for use after August 31 conveys any biological benefit, Wagner said; Idaho feels that those benefits are real. NMFS would also prefer to concentrate the release of the available storage water into the period when it will do the most good, rather than diluting those benefits by spreading it out over a longer period, as Idaho recommends.

Finally, said Wagner, there is also less-than-universal endorsement of the last objective – "Use results of temperature modeling and adult behavioral information to decide whether releases from Dworshak should occur during September to improve adult migration conditions." It was agreed that both FPAC and the TMT will continue to discuss this issue, with the idea of possibly raising it to the IT if it cannot be resolved. Would Idaho prefer to raise this to IT sooner, rather than later? Silverberg asked. I'll check with Ed Bowles, and report back on that, Steve Pettit replied.

Wagner suggested that a TMT weekly report on progress toward refill at each of the storage process – a "fuel gauge," if you will – would be helpful to in-season decision-making, in his opinion. There was general TMT agreement that such a tool would be very useful.

The group devoted a lengthy discussion to this list of objectives; Turner said he has concerns about some of the items on the list. In particular, he said, you're setting some pretty high flow targets here, during a runoff year that is projected to be below normal in the Snake Basin. It doesn't look to me as though 100 Kcfs will likely be achievable at Lower Granite in 2000, Turner said, yet if we buy off on this objective, the action agencies will be perceived as having failed miserably to meet it. MacKay suggested that the objectives list should probably contain a second tier of objectives, which would kick in if it is not possible to meet these primary objectives.

There was general agreement that, as aspirational goals, the Lower Snake River objectives listed in Wagner's document are acceptable to the TMT, although there is a need to add a definition of "objective." Perhaps what we should do now is move into strategies, suggested Silverberg – the actual operations that will help us achieve these objectives.

With respect to specific strategies, there seemed to be general agreement that some further thought and discussion will be required before a TMT consensus can be reached; we didn't even have an opportunity to discuss strategies at the FPAC meeting this week, Yoshinaka observed. It was also agreed that Billy Connor's suggested physical and biological triggers would be a good foundation for the strategies discussion.

Henriksen asked what physical biological parameters are most important, from the salmon managers' perspective – what pieces of monitoring information, in other words, will you be using as the basis for your SORs? she asked. Litchfield said that, in general, he would urge the TMT to take a more thoughtful, forward-thinking approach to in-season management in 2000. Last year, he said, we would miss a flow target by 2 Kcfs, and some TMT members would argue that we should start drafting storage projects to make up that shortfall, without any discussion of what we might need that storage water for four weeks from now, and what the biological tradeoffs might be. To me, said Henriksen,

the "fuel gauge" idea makes sense, because it would tell us, from week to week, how much snowpack is left, what the refill status is in each of the storage reservoirs etc.; perhaps we could overlay that with fish movement data to stimulate some more thoughtful discussion.

Margaret Filardo noted that, in season, the Fish Passage Center homepage posts a graph, updated three times a week, which projects the current status of the runs. That information is readily available, in other words, she said; perhaps what we're talking about here is simply an information-packaging problem, one that would be fairly easily solved.

In general, said Silverberg, what I'm hearing is a plea for better understanding about what each week's SORs are trying to achieve, so that the various TMT members can help each other achieve those goals. I think that's part of it, said Litchfield, but unless we start to be a little more explicit about what's motivating us, in terms of the biological factors driving our recommendations, we are doomed to repeat the same kinds of political arguments we heard in 1999.

The group spent a few minutes discussing the degree to which it is appropriate for the TMT to debate the merits of the weekly SORs; Filardo observed that the salmon managers' SORs are the result of extensive debate on all of these physical and biological parameters, and while there is no problem sharing how those recommendations were developed, once they are made, the fishery recommendations aren't really up for debate. Other participants took issue with that statement, noting that, if it is accepted, the weekly SORs would become, in effect, SODs – System Operational Demands.

I agree with Jim, said Robyn MacKay – I think we need to have a firm grasp of the bigger picture – what we're trying to achieve, overall, during, say, the April-June period – so that we're not just reacting to the weekly SSARR run.

So how do we move ahead, in a constructive way? asked Chuck Tracy. I think that if we could start to look at the next level of detail, which underlies the weekly SORs, and if we could look at some alternative priority schemes, and see how they play out, then we might find some things we can agree on, Litchfield replied. Take, for example, the "Strive to ensure" and "Utilize in-season management to balance reservoir refill in June" objectives, he said. What I heard Paul say was that, while 100 Kcfs should be the spring objective at Lower Granite, he recognized that, under many water conditions, that will not be achievable. At the same time, I heard him say that refill is important, and is probably a higher priority than flow – however, it's not as black-and-white as 95% probability of refill, and under certain conditions in the spring, we might put refill at greater risk.

If that's a fair characterization, said Litchfield, we might agree that refill is the first priority, but that, each week, we will review our progress toward that objective, and structure the weekly operational recommendations to meet the 100 Kcfs target if possible. In some weeks, if natural flows drop off, it may be necessary to invert these priorities and jeopardize refill in order to meet the needs of the fish, Litchfield said. However, Plan A would be to ensure that Dworshak is full heading into the summer season. Filardo observed that this isn't really different from what the TMT has always done. What I guess I'm suggesting is that the burden of proof would be different, Litchfield said – the salmon managers would need to be able to demonstrate that a clear biological problem exists in order to make increased flow a higher priority than refill.

I guess what I'm really trying to say is that, in my view, we need more of a discussion of the rationale behind these requests, and the fact that the actions we take early in the season involve tradeoffs, Litchfield said. It would be helpful if the salmon managers could acknowledge that they have discussed those tradeoffs, but collectively believe that what they're recommending is the best thing to do, despite the risks it involves later in the season. So it's the overt discussion of those tradeoffs that's missing, for you? Silverberg asked. Yes, Litchfield replied – the other thing that seems to be missing is a willingness to accept the responsibility for the fact that a recommendation to draft a reservoir right now is going to compromise another goal or priority down the road. Our work would be easier if we could reach some agreement, prior to the start of the in-season management period, about how we're going to address at least some of the many tradeoffs that exist, without explicit directions for resolution, within the Biological Opinion, said Litchfield.

Henriksen agreed, saying that, from the Corps' perspective, 1999 was a "lose-lose-lose" proposition. We were accused of not meeting the spring flow objective, she said, even though we operated Dworshak in the spring per the TMT's recommendation; because we used Dworshak in the early spring for flow augmentation, that project did not refill; because it didn't refill, the Corps was accused of failing to meet the summer flow objectives as well. To me, said

Henriksen, we never had that meaningful discussion of the tradeoffs involved in that chain of decisions – instead, it was all chalked up as a management failure by the Corps. Again, said Wagner, many of those tradeoff discussions occurred at FPAC, rather than TMT. Perhaps more documentation of FPAC's rationale would help resolve some of these concerns, Tracy suggested.

The discussion continued in this vein for some minutes. Ultimately, Silverberg reiterated the question of where this discussion goes, most productively, from here; Yoshinaka suggested that it might be appropriate for FPAC to have some further discussion on the question of in-season management objectives, and on the stumbling-blocks that seem to arise year after year. Wagner suggested further that FPAC and TMT focus, during the month that remains before the start of the in-season management period, on spring-season management objectives and issues – we can address summer issues later, he said.

The group spent a few minutes discussing objectives, technical parameters, information needs and issues that need further discussion at FPAC and TMT; this exercise resulted in the following list:

- Idaho water – legislative plan.
- Dworshak plan (Idaho)
- Dworshak/Brownlee at flood control by April 3
- April 1 forecast of water in Brownlee/Dworshak available for fish (storage graph)
- Update on available Reclamation water as information becomes available
- "Flood control plus" if the Corps deems feasible
- Dworshak/Brownlee above flood control on or near April 3 as appropriate
- 100 Kcfs weekly target at Lower Granite
- Weekly review of projected refill and how much is in storage
- "Needs of Fish" graph
- Expectations of runs – new visual aids

VII. 2000 Water Management Plan.

It was agreed, at the last meeting, that the TMT participants would review the draft Water Management Plan for substantive issues, and come to today's meeting prepared to comment, Silverberg said. Henriksen noted that the current draft of the 2000 WMP is still somewhat skeletal; my understanding is that the TMT would prefer to go with a more or less standard format for the 2000 plan, she said, and the Corps is moving in that direction. Henriksen noted that Dick Cassidy will be in the office starting this Monday, and part of his duties will be to flesh out the water quality sections of the plan, a duty that was performed in previous years by Bolyvong Tanovan. In general, she said, we would like to put some more flesh on the outline prior to the next TMT meeting; the problem, at this point, is simply manpower.

With respect to the outline, Henriksen suggested that the goals and objectives section the TMT has been discussing replace Appendix 6, the recurring issues or "grey areas" section, in the 2000 plan. She also asked the TMT to consider whether or not Appendix 7, the "favorite quotes from the BiOp" section, is still needed. Henriksen noted that the Corps is operating under the assumption that the 1998 BiOp will be the basis for the operational assumptions, at least in the initial drafts of the 2000 Water Management Plan. She asked that any TMT comments on the draft Water Management Plan be provided to her within the next week.

With respect to the TMT Guidelines, Henriksen said that, at the last meeting, it was noted that some of the Mid-Columbia parties would be talking separately with BPA about pre-meeting SOR distribution and the proposed changes to the TMT's weekly meeting schedule. MacKay said those discussions occurred last Friday; the issues discussed fall into two main categories: information needed for hydraulic control, and information needed for power marketing. We have not yet reached any resolution, at this point, MacKay said; those discussions are ongoing, and more meetings will be scheduled. I will provide further updates to the TMT as more information becomes available, she said.

VIII. Recommended River Operations.

A. Chum Salmon Operation. Henriksen said the Corps has been continuing to operate Bonneville to maintain 150 Kcfs outflow, as requested by the salmon managers; again, she said, if the Corps sees a problem with that continued operation, we will call the TMT. Yoshinaka said that, in the last day or two, state field personnel have noted some problems with chum redd exposure and chum fry stranding; a spot check of one area found 57 dead fry. As a result, said Yoshinaka, Chuck Tracy contacted BPA and requested that Bonneville outflow be increased to 160 Kcfs. The Fish Passage Center is in the process of looking at tailwater elevations at the project and the depth of water over the gauges to see if they can come up with a relationship between those two, which will allow us to better control water depths over the redds, Yoshinaka said – there may be some tidal effect that is causing us problems, and flows in the Willamette are low right now as well.

In response to a procedural concern raised by Henriksen, Yoshinaka added that the salmon managers are in the process of developing a formal SOR requesting the higher flow level; Tracy's request to BPA was in response to an emergency situation. MacKay said BPA is making best efforts to maintain 160 Kcfs outflow from Bonneville, adding that BPA considers this a short-term operation while the gauging issue is resolved – I wouldn't characterize 160 Kcfs as the new minimum flow from Bonneville from here on out, she said.

Henriksen noted that operational requests should go to the responsible project operator. In this case, the Corps should have been notified of any concern. The Corps may also have to notify Reclamation, since in this scenario may involve project operations at Grand Coulee. In the future any request for an operations must go to the project operators. Procedurally, TMT does have emergency protocols that have been agreed upon and are in place. In the future, if there is an emergency, please use them, she said.

B. Spring Creek Hatchery Release. Yoshinaka said the Spring Creek Hatchery release is still on schedule for March 9; the salmon managers are developing an SOR which will request 75 Kcfs spill from Bonneville during the day and spill up to the 120% TDG limit at night during the 10-day period following the release. Yoshinaka added that the SOR will likely request an increase in outflow from Bonneville to ensure adequate compensation depth coverage over the chum and chinook redds downstream, to protect emerging fry, and operation of the second powerhouse as first priority.

C. Nez Perce Request for Flows in the Clearwater River. Henriksen directed the TMT's attention to the February 23 letter from Nez Perce fisheries program manager Si Whitman, requesting that Dworshak outflow be increased to maintain 9.5 Kcfs at Peck from March 1 through June 15, in order to maintain adequate pumping flows for the juvenile fall chinook acclimation facilities at Peck.

The problem with this request, of course, is timing, said Henriksen – if we have to use Dworshak to maintain 9.5 Kcfs at Peck through June 15, there's a good chance that project will not refill in 2000. The question to the TMT is one of priority, said Henriksen, if we come down to the choice of refilling Dworshak or keeping the pumps watered in the spring, what do we choose? The TMT agreed the priority should be on refill of Dworshak. Steve Pettit suggested that it would make more sense for the Nez Perce to modify the pump intake at the hatchery; he said he will call the hatchery manager to discuss this concept.

Yoshinaka added that it will also be a topic of discussion at next week's FPAC meeting.

D. John Day Spill Test Video. Over lunch, Scott Boyd showed a video he took of the February 18 John Day spill test. The results from the test will be available soon, he said.

IX. Next TMT Meeting Date and Agenda Items.

The next meeting of the Technical Management Team was set for Thursday, March 9, from 9 a.m. to 1 p.m. at the Custom House. The next meeting after that was set for Thursday, March 30, at the same time and place. Meeting notes prepared by Jeff Kuechle, BPA contractor.

TMT ATTENDANCE LIST**FEBRUARY 24, 2000**

Scott Boyd	COE	503/808-3943
Margaret Filardo	Fish Passage Center	503/230-4286
Kim Fodrea	Reclamation	503/872-2802
Richelle Harding	D. Rohr & Associates	503/771-7754
Cindy Henriksen	COE	503/808-3945
Tim Herzenrader	Enron	503/464-7462
Jim Litchfield	Consultant	503/222-9430
Robyn MacKay	BPA	503/230-3385
Christine Mallette	ODFW	503/872-5252 x 5352
Chris Ross	NMFS	503/230-5416
Julie Sarnowski	Enron	503/464-7053
Donna Silverberg	Facilitator	503/248-4703
Chuck Tracy	ODFW	503,872-5252 x 2428
Glen Traeger	Avista Energy	509/495-4053
Rudd Turner	COE	503/808-3935
Paul Wagner	NMFS	503/2301-2316
Stacy Williams	DS Consulting	503/248-9923
Marv Yoshinaka	USFWS	360/696-7605

On Phone:

Name	Affiliation	Phone
Kevin Baker		
Russ George	Water Management Consultant	

Jim Gaspard	BC Hydro	
Pat McCann	Reclamation	
Steve Pettit	IDFG	

TECHNICAL MANAGEMENT TEAM

BOR: Kim Fodrea\Pat McGrane

NMFS: Paul Wagner\Chris Ross BPA: Scott Bettin\Robyn MacKay

USFWS: Marv Yoshinaka\Bob Hallock\Susan Martin

OR: Chuck Tracy\Christine Mallette WA: Jim Nielsen ID: Ed Bowles\Steve Pettit

MT: Jim Litchfield COE: Cindy Henriksen\Rudd Turner

COLUMBIA RIVER REGIONAL FORUM

TECHNICAL MANAGEMENT TEAM

RE: March 9, 2000 Meeting

FACILITATOR'S NOTES ON FUTURE ACTIONS

Facilitator: Stacy Williams

The following is a list of items the Technical Management Team (TMT) discussed at its last meeting that will require future action or discussion.

Minutes & Facilitators Notes:

Comments on the prior meeting minutes are due Friday, March 10 at 5 p.m.

Tribal 2000 River Operations Plan (CRITFC)

Kyle Martin presented CRITFC's river operations proposal. ACTION: The full plan will be out within two weeks following review by the tribal commission. Once approved, Kyle will forward the plan to TMT for posting. ACTION: Marv Yoshinaka will contact Bob Heinith to schedule a presentation of this plan at FPAC's March 21st meeting.

Flood control planning and operations (COE)

Peter Brooks presented a summary of flood control and VARQ.

ACTION: Cindy Henriksen will put the presentation on TMT's web page.

ACTION: For more detail on the VARQ studies and current reports, Peter can be contacted through the Northwestern Division Office : (503) 808-3929

Air Temperature and its effect on water temperature and fish

ACTION: Chris Ross and Scott Bettin will make a presentation at the meeting on March 27th. ACTION: Prior to the meeting, the graphics will be posted on TMT's web page.

Water Temperature Modeling of DWR and BRN summer releases

Cindy Henriksen reviewed the new modeling studies. ACTION: CRITFC requested comparison of the EPA and COLTEMP models. ACTION: Paul Wagner will request John Yearsley make a presentation to TMT on the EPA model.

Decision-making Criteria:

After discussion, the group agreed to continue developing goals and objectives at the next meeting on March 27th. ACTION: Paul Wagner will develop a list of bullet points from the existing BiOp as a framework for discussion.

Water Management Plan

Cindy Henriksen reviewed the current draft plan. ACTION: Kim Fodrea will review and provide comments on the Upper Snake Operations information. ACTION: Comments on the format and substantive comments by all TMT members need to be made by March 17th. ACTION: The Water Quality Team will review this plan at their meeting on March 14th.

River Operations:

Spring Creek:

ACTION: Spill to begin March 9th. Adjustments will be made daily as monitoring continues. FPAC will work closely with the Corps during this phase.

Chum Operation:

ACTION: Pending current events.

Nez Perce:

Steve Pettit hasn't reported yet on his meeting with the tribe's biologist.

ACTION: Cindy Henriksen is talking with the tribe.

TECHNICAL MANAGEMENT TEAM

MEETING NOTES

March 9, 2000

CORPS OF ENGINEERS NORTHWESTERN DIVISION OFFICES – CUSTOM HOUSE

PORLTAND, OREGON

DRAFT

I. Greeting and Introductions

The March 9 Technical Management Team meeting, held at the Custom House in Portland, Oregon, was chaired by Cindy Henriksen of COE and facilitated by Stacy Williams. 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.

Williams welcomed everyone to the meeting, then led a round of introductions and a review of the agenda.

II. Review of Last TMT Minutes.

Henriksen noted that the minutes from this meeting are now available, and asked that any comments be submitted to her by close of business Friday, March 10.

III. Air Temperature and Its Effects on Water, Temperature and Fish.

This agenda item was deferred until next meeting.

IV. Tribal 2000 River Operation Plan.

CRITFC's Kyle Martin said this plan will be formally debated at the CRITFC Commission meeting next week in Lewiston; CRITFC hopes to make this document public within the next two weeks. In the interim, he said, we thought it would be a good idea to go through the highlights here at TMT.

Martin said the tribal river operations plan is actually three different plans – the overall seasonal plan, based on the March final water supply forecast, a spring season plan, covering operations in April, May and June, and a summer operations plan, covering the period of July through September. He put up an overhead showing the tribes' recommended Dworshak operation in two-week time steps, in terms of desired outflows and expected inflows, based on the River Forecast Center's March final water supply forecast.

Beginning with Dworshak, said Martin, as most of you are aware, the Nez Perce Tribe and the State of Idaho are developing a separate Dworshak operations plan; their goal is to keep Dworshak full through the end of July, with a recognition that some of the Dworshak storage may need to be released early, depending on temperature conditions. In general, however, we would like to make maintaining a full pool at Dworshak a higher priority through the month of July, then release Dworshak water beginning in August and through September, Martin said. The Nez Perce have also made it clear that they do not want to draft Dworshak below elevation 1537 feet by August 31, Martin added, so that there is at least 200 KAF of Dworshak storage available to enhance migration conditions for adult salmon and steelhead during the fall period.

So you want Dworshak to be full by July 1? Jim Litchfield asked. Or earlier, Martin replied; the project would then remain full, and would pass inflow through the entire month of July. He added that the March final forecast shows the water supply at Dworshak at 104% of average. And you would update this monthly, based on subsequent forecasts? Litchfield asked. That's correct, Martin added, noting that hard and electronic copies of the tribal operations plan should be available following the Commission meeting next week in Lewiston.

There are provisions within the tribal plan for dealing with high temperatures in the Lower Snake River during July? Jim Nielsen asked. Yes, Martin replied – the Nez Perce/State of Idaho plan stipulates that, if Dworshak water is needed for cooling, that will take priority over maintaining a full pool at that project. That's something we'll need to debate on

a real-time basis, he said. Will you be setting some sort of physical or biological criteria for determining when the need for that water exists? Litchfield asked. Again, that's more of an in-season management question, said Martin – at this point, I'm not sure whether or not the tribal plan will reference specific temperature or biological criteria. I would recommend that you be as specific as possible, said Litchfield – in other words, I wouldn't assume that we'll know a temperature problem when we see it.

Martin then put up another overhead, explaining that he had drawn on his own experience with the National Weather Service, and on NOAA's 39-day forecast, to develop an informed guess about the likely shape of the 2000 runoff. Based on the best available information, he said, what I see is above-average temperatures in the southeastern portion of the Columbia basin, particularly Southern Idaho, throughout the spring. What this means is that we can expect to see an early runoff at Brownlee, said Martin, despite the fact that the climate forecast information shows essentially normal temperatures throughout most of the rest of the basin.

Moving on, Martin said the tribal plan will also request some flexibility in the timing of the flood control releases at Dworshak, despite the heartburn this is likely to cause the Corps. Essentially, he said, what we're looking for is a double peak in the freshet, the first in the spring, the second in the summer; naturally the feasibility of this operation will depend on actual weather conditions and runoff shape.

At Brownlee, Martin continued, I have assumed, for planning purposes, that we are going to get the full 427 KAF in Upper Snake flow augmentation water in 2000, despite the uncertainty about whether or not that water will actually be available. The tribes would prefer to see that 427 KAF released as early in the season as possible, while the Snake is still relatively cool, he explained.

Moving on to forecast flow conditions at Lower Granite, Martin said that, given the fact that the Brownlee runoff forecast is only about 70% of normal at this point, Snake River passage conditions are unlikely to be as good in 2000 as they were in 1999. What I'm forecasting is a double-peak freshet at Lower Granite, one in early May, and the other in June, he said. Keeping flows up in the late summer period, however, could be problematic in 2000, Martin said.

With respect to Grand Coulee, Martin continued, again, we're going to request some flexibility in the flood control operation at this project; the tribes' recommended operation has Lake Roosevelt drafting only to about elevation 1255 feet this spring. In addition, he said, both the Colville Tribes and the Spokane Tribes have requested that Grand Coulee be drafted no lower than elevation 1283 feet during the summer period, due to resident fish concerns; to maintain that elevation, we will probably need to draft Banks Lake by approximately 200 KAF.

The overall goal of all of these operations is to bring about a more normative hydrograph, Martin explained. At The Dalles, we anticipate that we will have a water supply of roughly 96 MAF to manage in 2000, compared to the 116 MAF we saw last year; what CRITFC would like to see is a higher springtime peak, cresting at about 420 Kcfs, with flows kept as high and stable as possible during the treaty fishing season in late August through mid- to late September.

Questions? asked Martin. Have you discussed the idea of taking 200 KAF out of Banks Lake with the Spokane and Colville Tribes? Kim Fodrea asked. Yes, and they do support that, Martin replied – they are willing to buy off on any operation that keeps the Lake Roosevelt pool elevation stable at 1283 feet or higher.

Given the fact that delaying the release of the Dworshak storage will result in outflow of about 14 Kcfs from that project throughout the month of August, does the tribal plan assume that you'll have a waiver in place? Litchfield asked. I believe so, Martin replied – both the Nez Perce and the State of Idaho appear to be willing to be flexible in negotiating the dissolved gas levels they will allow below that project in 2000. Also, what about the temperature issue at Dworshak National Fish Hatchery? Litchfield asked – have the tribes addressed the temperature of the Dworshak releases? That's just a detail at this point, Martin replied.

With respect to your proposal to draft 200 KAF from Banks Lake, said Reclamation's Pat McGrane, I would like to know specifically who you talked to at the Spokane and Colville Tribes. I think both Reclamation and the State of Washington would have a real problem with that operation, given the resident fish concerns and power concerns up there; 200 KAF is about 10 feet out of Banks Lake, McGrane said. Martin suggested that McGrane contact CRITFC's Bob Heinith on this issue.

NMFS' Chris Ross noted that, in the past, maintaining 1283 feet at Grand Coulee has been more of a fall kokanee spawning issue. Now you're saying that it's an issue in the summer as well, he said, and I was wondering what's changed. I'm not sure of the specifics, Martin replied; again, you should probably talk to the Spokanes and the Colvilles, or to Bob Heinith, directly.

So you will be distributing copies of the tribal plan within the next couple of weeks? Henriksen asked. Yes, unless there are any major changes requested by the Commissioners at next week's meeting in Lewiston, Martin replied. Marv Yoshinaka said the salmon managers would also like an opportunity to have substantive discussions on the tribal plan; Martin replied that Heinith will likely attend the next FPAC meeting on March 21.

V. Flood Control Planning and Operations.

Peter Brooks provided an extensive overview of the Corps' current flood control operations; he noted that electronic copies of his presentation are available via the TMT's Internet homepage. Please refer to this document for details of Brooks' presentation. Among the highlights:

- Much of the Corps' current flood control responsibility has its roots in the 1948 Vanport flood, in which flows in the lower river exceeded 1 million cfs, 20 people were killed and more than \$100 million in damage was done. The 1961 Columbia River Treaty, ratified in 1964, essentially gave Congressional approval to the Corps to operate the system for flood control.
- In 1991, under the Columbia River Tributaries Report, the Corps looked at all of the U.S. projects and their flood control requirements in moderate to below-average runoff years, and discovered that it is probably unnecessary to draft as much as had previously been required for flood control. As a result of that report, said Brooks, the flood control rule curves were brought up during those types of years, a change that resulted in an increase in average flow at The Dalles of about 20 Kcfs.
- In February 1997, the Corps developed a reconnaissance-level report on the possibility of reducing the flood control drafts at all projects in the system, including the Canadian projects; that report has received regional distribution.
- The current volume forecast at The Dalles is about 92 MAF, which, if true, would be expected to yield an unregulated peak flow of about 570 Kcfs at The Dalles. In both 1948 and 1954, the April 1 volume forecast at The Dalles was about 100 MAF, said Brooks; however, because of the shape of the runoff, the Corps would have needed approximately 30 MAF of storage space to regulate the 1948 flood, compared to only 10 MAF of storage to regulate the runoff in 1954. The point is that there can be a wide range of variability, in terms of flood control storage needs, with the same volume forecast, said Brooks.
- In addition, he said, actual runoff can increase dramatically from the April 1 or even May 1 forecast; in 1998, the May 1 forecast was 75 MAF at The Dalles, while the actual runoff was 90 MAF. The reason was that we got a lot of precipitation in May, said Brooks; bear in mind that these forecasts assume subsequent median precipitation during the forecast period. In other words, he said, while we do the best job of planning that we can, often, Mother Nature has some surprises in store for us – hence the Corps' traditionally conservative approach to flood control.

Martin observed that the Corps' basic flood control management was developed in the 1950s, when weather and hydro forecasting techniques were in their infancy. Those techniques are now much more sophisticated, said Martin; in addition, we're looking at significant near-term climate change with global warming. How do you see the Corps' flood control operations changing in the future, to adapt to this changing world?

Actually, I'm not convinced that our forecasts can get any better, Brooks replied, although we may have some tools available to tell us how reliable those forecasts are likely to be – the level of risk the corps is facing, in other words. That is several years away, however, Brooks said. As far as the short-term global warming issue, he said, that would need to be incorporated into the forecast procedures. But first, a quantitative relationship must be established between volume runoff and rising global temperatures – no easy task. The Corps' Russ Morrow added that, as the historical record of peak-to-volume ratios shows, despite man's best efforts at forecasting, the Columbia is still an extremely variable system. Another measure of that variability is the annual timing of the runoff peak; one-third of the peaks in

the historical record occur in May, two-thirds occur in June, and 1% occur in July. Can you imagine what would happen today if we saw a peak unregulated flow of 917 Kcfs on July 1? Morrow asked. Would anyone be willing to wait that long to start refilling the storage projects? Brooks asked.

One participant observed that, for Grand Coulee, at least, the Corps might consider a second flood control decision-point in mid- to late April. The other storage projects have drafted to their flood control elevations by April 1, he said, but Grand Coulee is still drafting significantly throughout the month. If conditions are such that flood control is no longer a significant concern by late April, he said, the Corps might consider holding some of that Grand Coulee storage back, so that the project isn't drafted all the way down to its flood control elevation, and doesn't have quite as far to climb to refill in May and June.

With respect to VARQ, Brooks reminded the group that VARQ was proposed in about 1990 as a system flood control initiative, to be applied at Libby and Hungry Horse. Under VARQ, he said, the level of system flood control protection would not change; the goal of VARQ is to reduce the flood control draft at Libby and Hungry Horse in average and below-average years. Based on the Corps' analysis, VARQ does enhance the refill probability at those two projects, to a certain degree; it also, however, requires an increase in the flood control draft at Grand Coulee – by up to five feet in some years.

What's the probability distribution, as far as the average increase in the flood control draft at Grand Coulee under VARQ? Litchfield asked. Based on the BPA and Corps analyses, the average increase was about two feet, Morrow replied; in some individual years, the increased draft was seven to nine feet. He added that the Corps is continuing to refine the assumptions that were made in these analyses about the flood control storage correction at Grand Coulee, and to develop more of a pure spreadsheet approach. Typically, however, VARQ would result in an increased flood control draft of between 2 and 3 feet at Grand Coulee, when The Dalles runoff forecast is between 75% and 100% of normal, said Morrow. By the end of summer, he added, the Corps hopes to be in a position to better define what these drafts should be; once that work is completed, we'll put out a report explaining what we've found.

In general, Brooks reiterated, the Corps' analysis shows that, in average to below-average water years, implementation of VARQ would result in higher Libby and Hungry Horse elevations, as well as greater outflow from those projects during the refill period. In above-average water years, both VARQ and the standard flood control procedure require a maximum flood control draft – in other words, in above-average water years, there would be no benefit to VARQ, in terms of a reduced draft at Libby and Hungry Horse.

The point of this presentation is to show you that, basically, when I am unable to implement requests to change the Corps' flood control operations, it is because I am not the sole decision maker. I'm implementing the plans developed in Peter's shop, Henriksen said.

VI. Water Temperature Modeling of Dworshak and Brownlee Summer Releases.

As you'll recall, said Henriksen, we have been analyzing the scenarios Paul Wagner put together for 2000 Dworshak and Brownlee operations, and their impact on water temperatures at Lower Granite, using the Corps' COLTEMP model. At the last TMT meeting, there was a request that the Corps also estimate the effects of these operational scenarios on water temperatures at Ice Harbor. We have now done so, she said; I don't think we need to go through this information in detail, but it is available to inform our later decision-making.

In general, said Rudd Turner, the Ice Harbor model runs show less of a temperature spread than Lower Granite runs – in other words, the effects of the variations in Dworshak and Brownlee operations are less apparent at Ice Harbor than they are at Lower Granite. Scenario 7, in which almost all of the Dworshak storage is released in July, is still the outlier in the Ice Harbor runs, Turner added.

Martin said CRITFC would like to see a graph comparing the results of the COLTEMP model studies and John Yearsley's model studies; Henriksen said the Corps is concerned about such a comparison, because the two models were run using different base-year assumptions. Perhaps it would be appropriate to have John Yearsley attend TMT to discuss his model as compared to the Corps', Henriksen said. Paul Wagner agreed to try to contact Mr. Yearsley to find his availability to attend TMT.

VII. Decision-Making Criteria for TMT.

As you'll recall, said Henriksen, the TMT has been discussing decision-making criteria for the Lower Snake River; the suggestion for today was that we talk about some of the criteria and how we might get there. Henriksen distributed a handout, "TMT In-Season Management Criteria – Objectives and Triggers," dated February 2. You will recall that, at the last TMT meeting, we took a first cut at a list of strategies to help us accomplish our objectives in the Lower Snake, Henriksen said; perhaps this list would be an appropriate starting-point for our discussions today.

Litchfield suggested that one obvious area where more discussion is needed is the relative importance of achieving refill by June 30 vs. flow augmentation for spring migrants. Right, said Henriksen – the first boundary is that the Corps is going to evacuate Dworshak for flood control, but after that, it would be helpful if we could decide whether our first priority is refill, or spring flow augmentation. Last year, the TMT chose flow augmentation over refill; that's fine, Henriksen said, but it would be helpful if we could come to agreement on whether flow augmentation or refill is the higher priority, before we enter the 2000 in-season management period. It would certainly be beneficial to all of us if we could be clear about that, Litchfield agreed.

Michelle DeHart observed that the Biological Opinion is clear that refill should be the highest priority, in that it lays out specific project refill target dates. Are we talking, then, about changing the priorities that are already set in the Biological Opinion, or are we simply trying to confirm them? she asked. The TMT's mandate is to implement the Biological Opinion, Bettin observed – in 1999, what happened was that we argued this issue until we passed the point where refill could be achieved at Dworshak. However, refill is the highest priority. Chris Ross agreed, but added that the BiOp also allows for in-season flexibility, so that the TMT can make decisions based on the needs of the fish from year to year. This being the case, said Litchfield, I would suggest that we say something to the effect that, while refill is our first priority, in some years, there may be a need to provide some spring flow augmentation, and in years where conditions are such that fish are in jeopardy, we may not be able to achieve refill.

Ed Bowles said his concern about setting these kinds of in-season management priorities is their potential to unnecessarily constrain operations that are needed for fish. We all recognize that various entities have conflicting operational priorities, and that it isn't going to be possible to satisfy them all, every year, he said – what is needed is adequate flexibility for the salmon managers to debate those conflicting priorities and figure out what's best for the fish. My point is not that these priorities would be inviolate, said Litchfield – it is simply that, in ordinary years, they would guide our decision-making, and that if we decide to depart from those priorities, we pay attention to why. In other words, he said, there need to be some special hurdles to get over if we're going to recommend a different operation.

Litchfield and Ed Bowles spent a few minutes debating the language and intent of the Biological Opinion; ultimately, DeHart observed that what she has taken away from this conversation is the idea that in the goals and objectives section of the Water Management Plan, the TMT should attempt to boil down the BiOp language into a few short phrases that can be used to guide in-season management decisions. That's more or less what the Water Management Plan is every year, said Henriksen – we're just trying to create a new format this year. Basically, what I think Jim is suggesting is that we lay out those objectives, recognizing that we have the flexibility to choose a different operation if that's what's best for the fish, but also recognizing that, if we depart from the BiOp's suggested priorities, we need to recognize that as well, and take responsibility for our actions.

DeHart observed that, at this point, the TMT may be at impasse, in terms of their ability to come to consensus on the next level of detail. Why is that? Henriksen asked. Because there is not agreement, among the salmon managers, about whether we should place a higher priority on spring operations or summer operations, beyond that level of specificity provided by the BiOp, DeHart replied.

What I'm trying to avoid is the same kind of week-to-week prioritizing and decision-making the TMT has done for the past several years, said Litchfield – I think it would be better for the fish, and better for us, if we could look farther into the future, and decide that there may be a higher, better use for a particular pot of storage water. That way, when someone comes to us in the pre-season period and requests Dworshak water to keep some pumps working, as happened just last week, we can base our response on more than just the here and now.

The discussion continued in this vein for some minutes. In response to a question, Paul Wagner said that, for 2000 planning purposes, the TMT should continue to operate according to the provisions of the 1995/1998 BiOps. The 2000 BiOp won't kick in until the 2001 migration season? Bowles asked. That's right, Wagner said – under the present schedule, the 2000 BiOp won't be signed until July 1, by which point there will only be a month left in the in-season management period.

Williams observed that it may be time to discard the word "priority," because it has negative connotations for some TMT participants, in terms of constraining operational flexibility. What I'm hearing is a desire to lay out factors to consider and use in the decision-making process, and to talk about in a uniform way, she said. I think that's the real purpose of this discussion, Williams said.

The fact of the matter is, however, that prioritization is what the TMT does, said Litchfield. It is a fact of life that we don't have an infinite amount of water, we don't have an infinite amount of money, and we don't have an infinite number of people to accomplish the work that needs to be done. In that environment, said Litchfield, you have to make choices – you have to say, we need more of this, and less of that. It is all about tradeoffs, he said; while "priority" may be a loaded word for some, the point is that we need better discipline so that, when we do make a tradeoff decision, we don't pretend that we don't know the tradeoff exists.

I'm hearing two things, said Ross – a discussion of appropriate goals and objectives for TMT, and a discussion of the need for a clear understanding of the reasons requests and decisions are made. With respect to the second point, he said, I believe we made an attempt to address that through the improved SOR format, discussion and tracking processes we implemented last year. I would suggest that if we adhere to and improve on those processes in 2000, we will allay at least some of the concerns Jim has raised. I think that's a very sound suggestion, said Litchfield.

Ultimately, Litchfield suggested that if the Water Management Plan was more explicit about priorities and objectives, that would make it easier for the TMT participants to both draft SORs and respond to them. I don't think that would be a massive undertaking, he said – maybe we can start with the BiOp and extract the relevant bullets. Is that something NMFS could do? Williams asked. Yes, Wagner replied. In response to a suggestion from Williams, Wagner said he will attempt to complete this assignment prior to the TMT's March 27 meeting. It was agreed to continue this discussion at that time.

VIII. 2000 Water Management Plan.

Henriksen said the Corps is in the process of updating the technical information contained in the 2000 Water Management Plan, as the relevant information becomes available. She asked the other TMT participants to provide specific comments on the content and structure of the 2000 plan; it was agreed that these comments will be submitted to her by Friday, March 17.

IX. Recommended River Operations.

A. SOR 2000-1: Bonneville Dam Chum Salmon Operation. This SOR, drafted with the participation of ODFW, USFWS, WDFW, NMFS and IDFG, requests that the Corps maintain Bonneville tailwater elevation at a minimum of 15.7 feet to provide some water over the highest chum redd at Ives Island. Henriksen said that, under the upcoming Spring Creek Hatchery operations this request will be overtaken by events. The Corps does not necessarily endorse the tailwater-Vancouver gage relationship used by the salmon managers and we are exploring other methods to measure the depth at the redds with the River Forecast Center or through the Corps' UNET model.

B. SOR 2000-3: Spill and Flow at Bonneville Dam for the Spring Creek Hatchery Release. Yoshinaka said that, in support of the Spring Creek Hatchery fall chinook release, SOR 2000-3 (developed by ODFW, USFWS, WDFW, IDFG, CRITFC and NMFS) requests the following operations at Bonneville Dam during the period of March 9 (today) and March 18:

- No operation of unscreened units at Bonneville Powerhouses 1 or 2 and follow the turbine operating priority in the Fish Passage Plan

- Operate Powerhouse 2 as the first priority. Fully load PH2 before operating PH1.
- Spill up to the 120% TDG level 24 hours a day (as measured at the Warrendal monitor) while maintaining a level of 105% TDG (factored for depth compensation) at the Ives gauge 2.
- Operate Bonneville 2 ice and trash sluiceway
- Operate turbine units within 1% peak efficiency
- Operate juvenile and adult facilities according to criteria
- The calculated volume of flow to provide depth compensation to the highest observed redd is a flow at Bonneville of 265 Kcfs. This level of flow is in excess of the levels forecast by the action agencies for this period. Providing this volume of flow for the full 10 days given current reservoir levels may create a conflict with Grand Coulee achieving its upper flood control rule curve by April 10. The action agencies need to take immediate actions to reserve additional quantities of water for fisheries purposes. These actions should include power purchases and the provision of additional system flexibility by adjustments to upstream flood control and utilization of John Day Reservoir flood control space to implement the Spring Creek spill program.
- Flows should be ramped down at a rate of no more than 20 Kcfs/hour to avoid stranding. These operations are to begin at 10 p.m. on March 9, and continue through 10 p.m. on March 19.

Yoshinaka spent a few minutes going through the specifics of this SOR, the full text of which is available via the Fish Passage Center Internet homepage. Please refer to this SOR for full justification and other details.

Yoshinaka said the salmon managers have been discussing the issue of potential power purchases in lieu of storage releases from Grand Coulee; the answer we received is that the cost of those purchases would be such that the action agencies preferred to release the water from Grand Coulee and continue to generate power. In addition, said Yoshinaka, on Tuesday, the action agencies responded to this SOR by saying that they are willing to provide a spill of 80 Kcfs at Bonneville, rather than 24-hour spill up to the 120% gas cap, as the SOR requests. The action agencies also said that a water depth of 1.3 feet at the Ives Island gauge would be set as the reference point. As the SOR points out, said Yoshinaka, the salmon managers would prefer to see a greater water depth at the Ives Island gauge to provide some depth compensation for the higher gas levels we'll be seeing under this spill program.

The action agencies also indicated that they are willing to provide a flow of 210 Kcfs out of Bonneville, Yoshinaka continued; based on our calculations, he said, we need a water depth of about 5 feet over Ives Island gauge 2 if we're spilling at 100 Kcfs. What we're asking is that the action agencies try to maintain that depth, he said, if we're going to get outflow from Bonneville in the 210 Kcfs range.

Can you provide estimates of the difference in fish passage efficiency between flows of 210 Kcfs and 265 Kcfs? Bettin asked. We can make those available, Yoshinaka replied. My sense is that it's almost zero, said Bettin. I think it's more than zero, but I don't have those figures with me, Yoshinaka replied.

Why did you request 265 Kcfs? Bettin asked. That is our estimate of the flow needed to provide adequate depth of coverage over the highest Ives Island chum redds, if we were going to be spilling up to the 120% TDG level, Yoshinaka replied. Basically, we're trying to provide maximum FPE conditions for the Spring Creek fish passing Bonneville, while simultaneously maintaining adequate river depth to protect the emerging fall chinook and chum fry, he said. In our analysis, a flow of 210 Kcfs provides almost exactly the same FPE, but produces less gas, Bettin observed – in other words, it doesn't appear that you really need that extra 50 Kcfs in flow. I'll have to check on that, said Yoshinaka.

Henriksen noted that the action agencies' response to this SOR focused mainly on the goals and objectives of the Spring Creek operation, rather than on specific flow, TDG and elevation numbers. The main objective we focused on, she said, was 105% TDG at Ives Island gauge 2. In our response, that objective was pretty much the driving factor, in terms of what we want to accomplish. Basically, we intend to supply a depth-compensated 105% TDG at the Ives Island gauge, using the Skamania TDG monitoring station as our guide, Henriksen said. We will begin the spill program tonight, and look at the Skamania TDG readings, as well as the depth readings at the Ives Island gauge, in the morning. I also understand that the Fish and Wildlife Service will be doing some field monitoring tonight, and will be providing some data on conditions at the redd sites, Henriksen said. That's correct, said Yoshinaka – we will be measuring water depth and TDG at the redd sites and in the Ives Channel.

So the action agencies are proposing 210 Kcfs discharge from Bonneville and 80 Kcfs spill, rather than 265 Kcfs discharge and spill up to the 120% gas cap? Jim Nielsen asked. What we're actually proposing is to start spill at 100 Kcfs, and evaluate the results of that spill level daily, Henriksen replied. It's actually a bit of a sliding scale, said Turner – we're anticipating flows at Bonneville in the 200 Kcfs-220 Kcfs range tonight; if flows drop to 180 Kcfs, we would reduce spill to 80 Kcfs. Bonneville is currently releasing 220 Kcfs, which is producing a tailwater depth of 18.5 feet, Turner said, or about 5.5 feet at the Ives Island gauge.

If we see TDG levels below 105% at the Ives Island gauge, we will probably call the Corps and request that spill be increased, Yoshinaka said. Understood, said Henriksen; again, it is our intent to review this operation daily, and make adjustments as needed.

Turner added that, according to the latest information he has seen, the four seine surveys since February 22 have captured a total of seven chum. Given the fact that chum tend to move out quickly once they're out of the gravel, do you think there are still chum in those redds to protect? Turner asked. There should be, Martin replied – chum are very difficult to capture in a seine. Yoshinaka added that, according to ODFW's calculations of water temperatures and incubation times, most of the chum fry will be emerging in early April; the chinook fry will be emerging well into May.

With respect to the action agencies' response to this SOR, Yoshinaka said the action agencies are willing to commit to seven days of spill, rather than 10, although they may be willing to extend the spill period to 10 days if smolt monitoring/fish passage information supports such a step. We believe this should be a fishery agency call, Yoshinaka said; we will monitor the indices, and let you know if we think fish numbers have dropped to a level where spill is no longer warranted. We would be happy to receive your recommendation, Bettin replied.

C. Nez Perce Request (SOR 2000-2). This SOR, drafted with the participation of ODFW, USFWS, WDFW, NMFS, IDFG and CRITFC, requests that, beginning immediately, and until further notice, instantaneous outflow from Dworshak be limited to the amount necessary to achieve 9.5 Kcfs at the Peck gauge. The purpose of this request is to maintain adequate river flows for the pump intakes at the Nez Perce Tribe's juvenile fall chinook acclimation facility at Peck.

Henriksen noted that Dworshak is currently being drafted for flood control; consequently, there should be no problem in meeting this request through the month of April, based on the current inflow forecast. If the need for these flows continues into June, however, it may be difficult for the Corps to maintain the requested flow level at Peck during May and June. In their discussions with the Corps, the Nez Perce fish managers have indicated that they should be able to accommodate a drop in flows later in the season by modifying their operations.

X. Next TMT Meeting Date and Agenda Items.

The next meeting of the Technical Management Team was set for Thursday, March 30, from 9 a.m. to noon at the Customs House. Given the need to finalize the TMT's pre-season planning processes prior to the start of the in-season management period, a second TMT meeting was set for Monday, March 27, from 1-4 p.m., also at the Customs House. Meeting notes prepared by Jeff Kuechle, BPA contractor.

TMT ATTENDANCE LIST

MARCH 9, 2000

Scott Bettin	BPA	503/230-4573
Scott Boyd	COE	503/808-3943
Dick Cassidy	COE	503/808-3938
Michelle DeHart	Fish Passage Center	503/230-4288
Ken Dragoon	PacifiCorp	503/262-4951
Margaret Filardo	Fish Passage Center	503/230-4286
Kim Fodrea	Reclamation	503/872-2802
Russ George	Water Management Consultants Inc.	503/253-1553
Richelle Harding	D. Rohr & Associates	503/771-7754
Cindy Henriksen	COE	503/808-3945
Tim Herzenrader	Enron	503/464-7462
Jim Litchfield	Consultant	503/222-9430
Christine Mallette	ODFW	503/872-5252 x 5352
Kyle Martin	CRITFC	503/731-1314
Pat McGrane	Reclamation	208/378-0521
Russ Morrow	COE	503/808-3951
Chris Ross	NMFS	503/230-5416
Patty Smith	BPA	503/230-7349
Chuck Tracy	ODFW	503,872-5252 x 2428
Glen Traeger	Avista Energy	509/495-4053
Rudd Turner	COE	503/808-3935
Maria Van Houten	Enron	503/464-7961
Paul Wagner	NMFS	503/2301-2316
Stacy Williams	DS Consulting	503/248-9923
Marv Yoshinaka	USFWS	360/696-7605
Nancy Yun	COE	503/808-3937

On Phone:

Name	Affiliation	Phone
Kevin Baker		
Russ George	Water Management Consultant	
Jim Gaspard	BC Hydro	
Pat McCann	Reclamation	
Steve Pettit	IDFG	

TECHNICAL MANAGEMENT TEAM

BOR: Kim Fodrea\Pat McGrane

NMFS: Paul Wagner\Chris Ross BPA: Scott Bettin\Robyn MacKay

USFWS: Marv Yoshinaka\Bob Hallock\Susan Martin

OR: Christine Mallette \Chuck Tracy WA: Jim Nielsen ID: Ed Bowles\Steve Pettit

MT: Jim Litchfield COE: Cindy Henriksen\Rudd Turner

COLUMBIA RIVER REGIONAL FORUM

TECHNICAL MANAGEMENT TEAM

RE: March 27, 2000 Meeting

FACILITATOR'S NOTES ON FUTURE ACTIONS

Facilitators: Donna Silverberg

The following is a list of items the Technical Management Team (TMT) discussed at its last meeting that will require future action or discussion.

Minutes & Facilitators Notes:

Comments on the prior meeting minutes are due Friday 3/30 by 5 p.m.

Air Temperature and Its Effect on Water Temperature

Scott Bettin and Chris Ross presented information from their coordinated effort of combining air and water temperature data for the group to review. Scott agreed to follow up on 96 & 97 air temperatures (looked the same). John Yearsly is expected to join the group on 3/30 to discuss DWR temperature effects.

ACTION: Paul will run the model without DWR water to understand the influence it does or does not make on temperature. He agreed to report back in 2-3 weeks.

Water Management Plan:

The group discussed all written/submitted comments. The following changes were agreed to:

- Page 8, V Summer Ops—add 1999 Libby Arrow no swap occurred
- Provide end of August 1999 storage reservoir elevation levels
- Add DWR spring spill information (Paul Wagner will provide)

- Add, footer/header with the last the document was updated date on each page
- MOP is planning date of April 3 and actually coincides with the beginning of spill
- Provide an overall acknowledgement of the new BiOps due this year and the possibility that the WMP may change as a result of their guidance
- Cindy/Corps will review the April 10 dates noted on page 5
- In Other Reservoir Spring Ops—add that USFWS may make recommendations regarding bull trout that might effect operations at Hungry Horse
- Section VI—clarify last sentence in 1st paragraph—change "adjusted" to "normalized"
- Add a section following summer operations describing September-March operations to include 2000 Supplemental BiOp. It should be noted that details of the operations will be added in August.

TMT Guidelines (changes):

- SOR's will be available on the TMT homepage on Tuesday afternoon. Links between the TMT Homepage and the Fish Passage Center homepage will be maintained for easy access.
- SOR's shall be numbered based on the agency or group making the request (e.g. SM-1, CRITFC-1, USFWS-1, NMFS-1, etc). SOR's will note which additional agencies support the request.
- Page 7, V "The public may comment on an issue at the end of the discussion on that issue or at the end of the meeting, based on the discretion of the group and the facilitator"

ACTION: The Corps will revise the WMP and the TMT Guidelines based on these comments and distribute to the group 4/3 for final input by 4/6. The group intends to finalize both documents at its April 13 meeting.

Decision-making Criteria:

ACTION: All agreed to review Corps material and NMFS 1-pager on objectives. Everyone should feel free to augment or change them with new ideas. A full discussion of the goals, objectives and criteria will be held at the April 6 meeting (which now is

9 a.m.-1p.m. to accommodate this discussion)

Next Meetings:

The next meetings are scheduled for:

- Thursday, March 30th 9-12, Jacqueline Abel will facilitate.
- Thursday, April 6th 9 a.m.-1 p.m. (bring a brown bag lunch).

Proposed Agenda Items for 3/30:

- John Yearsly DWR temperature effects
- Waiver Update
- Idaho Updates (as appropriate)

- Hanford Reach Update
- SOR #2000-7

TECHNICAL MANAGEMENT TEAM

MEETING NOTES

March 27, 2000

**CORPS OF ENGINEERS NORTHWESTERN DIVISION OFFICES – CUSTOM HOUSE
PORTLAND, OREGON**

DRAFT

I. Greeting and Introductions

The March 27 Technical Management Team meeting, held at the Custom House in Portland, Oregon, was chaired by Cindy Henriksen of COE 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.

Silverberg welcomed everyone to the meeting, then led a round of introductions and a review of the agenda.

II. Review of Last TMT Minutes.

Henriksen noted that the minutes from last meeting are now available, and asked that any comments be submitted to her by close of business Friday, March 31.

III. Air Temperature and its Effects on Water Temperature and Fish.

BPA's Scott Bettin distributed a handout containing a number of graphs and charts comparing Snake River water temperatures at Lower Granite, air temperatures at Lewiston, flow at Lower Granite and the volume and temperature of Dworshak releases over the 1995, 1996, 1997, 1998 and 1999 seasons. Generally, he said, as air temperatures decline, so, gradually, do water temperatures; it's not a tight correlation, but it does exist. Years when air temperatures exceed 100 degrees at Lewiston for extended periods, not surprisingly, have more of an impact on water temperatures.

The group spent a few minutes going through this information; ultimately, Bettin observed that, unfortunately, there doesn't appear to be anything that jumps out of this information, in terms of temperature triggers for the timing or magnitude of the Dworshak releases, to help guide in-season operations.

Paul Wagner noted that John Yearsley is planning to attend the TMT's March 30 meeting, to discuss his water temperature model, and the differences between the EPA model and the Corps' ColTemp model. In response to a question from Jim Litchfield, Wagner said the critical period, from a water temperature standpoint, is July 1-August 1, when perhaps 70% of the annual run moves downriver. Bettin observed that, in his six years of experience with this issue, what generally happens is that water temperatures reach crisis levels some time in early August; by August 31, he said, we have tried everything we can to get them down, and in September, as air temperatures cool, the problem basically goes away by itself. Jim Nielsen noted that it would be interesting to see

Brownlee temperature and release volumes plotted against the Dworshak and Lower Granite and Lewiston air temperature information. Wagner added that it would also be interesting to ask John Yearsley to do a model run showing what might happen if Dworshak was kept on minimum outflow or passing inflow through the entire migration season; that might tell us a lot about just how much influence those Dworshak releases have in the lower river, he said. In response to a question from Silverberg, Wagner said he will ask Yearsley to do this additional model run.

IV. 2000 Water Management Plan.

Henriksen said she had received email comments on the draft 2000 Water Management Plan from ODFW and the Fish and Wildlife Service earlier today; additional comments have also been received from NMFS. Chris Ross said he had emailed some additional comments to Henriksen this morning as well; Henriksen said Ross' comments have not yet been received.

The group devoted considerable discussion to these comments, and to the draft Water Management Plan in general. At the close of this discussion, Henriksen said she will incorporate the comments discussed today into a new draft of the Water Management Plan, hopefully prior to the April 6 meeting.

It was agreed that the 2000 WMP needs to reference the 2000 interim ("Chum") BiOp; how far, then, do you want this plan to extend into 2000? Henriksen asked. Right now, the plan pretty much stops in early September; if we address the 2000 chum BiOp, we will need to add another section extending at least through October. Given the fact that we're now making operational decisions throughout the year, said Jim Litchfield, it probably makes sense to make this a March-to March plan. After a brief discussion, it was agreed that what probably makes the most sense is to update the Water Management Plan periodically throughout the year, as better water supply information becomes available and as the provisions in the 2000 Biological Opinion become known; the Corps will also need to add another section, dealing at least with the September-December period and the provisions of the 2000 supplemental chum BiOp.

Ultimately, Henriksen asked that any further TMT comments on the 2000 Water Management plan be submitted to her by April 6, with the goal of finalizing the plan at the April 13 TMT meeting.

The discussion then moved on to the 2000 TMT Guidelines; Silverberg noted that outstanding Guidelines issues involve TMT meeting dates, the timing and distribution of SORs and a few other items. The first issue discussed was the move to Thursday mornings, rather than Wednesday afternoons, for the weekly TMT meeting; after a few minutes of debate, it was agreed that the TMT's weekly meetings will begin at 9 a.m. Thursdays. It was further agreed that all SORs will be due by 4 p.m. Tuesday, and that they will be posted on both the Corps' and the Fish Passage Center's websites on Tuesday afternoon. It was further agreed that links between the Corps' and the FPC's websites will be maintained, and that SORs will be identified by submitting agency (SM-1, CRITFC-1 etc.)

Various additional comments and suggestions on the 2000 Guidelines were provided at today's meeting; ultimately, Henriksen agreed to incorporate these comments into a new draft of the Guidelines, to be posted to the TMT homepage prior to the April 6 TMT meeting.

With respect to membership, Chuck Tracy noted that Christine Mallette is now Oregon's TMT representative, and that he will serve as alternate.

V. Decision-Making Criteria for TMT.

Silverberg suggested that, given the lateness of the hour, it probably makes sense to postpone discussion of the TMT decision-making criteria until a future meeting; she added that it might be helpful to set aside some time specifically to address this subject. Silverberg asked the TMT to look at Paul Wagner's one-page list of Columbia River objectives, and to use the list as a springboard for further thinking and ideas. Basically, she said, we're still in the brainstorming stage with this process; I would suggest that we set aside an hour after the April 6 meeting, from noon to 1 p.m., to discuss this further. No TMT disagreements were raised to this

suggestion.

VI. Review of Reservoir Operations (SORs 2000-5 and 2000-6)

Prior to today's meeting, the salmon managers (ODFW, USFWS, WDFW, NMFS, IDFG and CRITFC) submitted SOR 2000-5, which requested the following specific operations:

- The goal of the fishery agencies and tribes through submittal of this SOR is to store as much water as possible to allow flexibility in affecting fish passage conditions basinwide. Therefore, unless otherwise notified:
- Immediately decrease outflow from Dworshak Dam to an instantaneous flow of 4 Kcfs. Store this saved water for a potential flood control shift, allowing its use during the fish migration period.
- Reduce flows at Bonneville Dam to no more than that necessary to maintain a tailwater elevation of 15.7 feet (see SOR 2000-1). It is expected that this will require flows in the range of 160 Kcfs to 180 Kcfs. Store the additional water in Grand Coulee Reservoir for use during the fish migration period.

The full text of this SOR is available via the TMT's Internet homepage; please consult this document for justification and other details.

Yoshinaka went briefly through the contents of this SOR. Henriksen said she is somewhat puzzled by the requested operations in this SOR; you request that we store water in Dworshak for a potential flood control shift, and also that we store water in Grand Coulee for fish migration, which is not a shift. This is a problem, Henriksen said, because there is no way we can do both. My understanding of the discussion during the March 17 FPAC meeting was that there was a recognition that shifting flood control from Dworshak to Grand Coulee would result in a little more flow in the Snake River, and a little less flow in the Mid-Columbia, she said; there was also a desire to maintain both a steadily rising flow in the Hanford Reach, and a minimum depth of 2.5 feet at the Ives Island gauge No. 2. This SOR is different from that, she said, yet it came out on the same day as that meeting.

The group discussed whether the 15.7-foot tailwater elevation, the 160 Kcfs-180 Kcfs flow range or the 2.5-foot depth at the Ives Island gauge is the most important management target; after a few minutes of debate, Yoshinaka said the 2.5-foot minimum depth at the gauge is really the most critical target, and that the suggested flow range and tailwater elevation at Bonneville are mainly management options for achieving that objective. It may make more sense for the salmon managers to say simply that maintaining that 2.5-foot minimum depth is the goal, and leave it up to the project managers as to how they achieve that, suggested Scott Bettin.

Ultimately, it was agreed to postpone the development of a recommended operation for this SOR until SOR 2000-6 has been discussed.

Prior to today's meeting, the salmon managers (ODFW, USFWS, WDFW, NMFS, IDFG and CRITFC) also submitted SOR 2000-6, which requested the following specific operations:

- Maximize water volume storage in Grand Coulee, Dworshak and Brownlee to enhance water availability for spring migrants while meeting the Bonneville flow constraint. If possible, exceed the April 10 Biological Opinion reservoir target elevations.
- Reduce Dworshak outflow to 2 Kcfs until flows are requested for the spring migration. Monitor the Peck USGS gauge to assure that natural flows are sufficient to maintain 9 Kcfs at Peck to facilitate the acclimation pond water supply to the Nez Perce tribe acclimation ponds.
- Reduce outflow from Grand Coulee to maintain flows of 170 Kcfs, or minimum tailwater of 15.7 feet (as requested in SOR 2000-1) at Bonneville and store inflow in excess of the Bonneville flow requirement. Store volume until flows are requested for the spring migration.
- Implement an instantaneous minimum flow of 105 Kcfs at Priest Rapids Dam with a gradual 1 Kcfs per hour ramping rate. Maintain this operation until flow augmentation for spring migrants is requested. Flows should not be decreased to avoid stranding of juvenile fall chinook emerging below Priest Rapids at Vernita Bar.

The full text of this SOR is available via the TMT's Internet homepage; please consult this document for justification and other details.

Again, Yoshinaka went briefly through the contents of this SOR; Wagner commented that this SOR appears doable. It appears doable on the surface, Henriksen replied, but the recommendation that Dworshak outflow be reduced to 2 Kcfs has underlying currents that make it infeasible at this time – if we reduce Dworshak outflow to 2 Kcfs, that would cause a strong risk of exceeding the 110% TDG standard downstream from that project in April. Given the fact that we don't currently have a waiver for that period, Henriksen said, I'm not comfortable with that operation at this time. That brings us back to SOR 2000-5, Henriksen said; my understanding is that we are already implementing at least a partial shift at Dworshak.

So does anyone understand what's going to happen with SOR 5 or 6? Silverberg asked – it sounds as though SOR 2000-5 is already being implemented. That's correct, Henriksen replied. What about SOR 2000-6? Silverberg asked. My assumption is that, if we've implemented SOR 2000-5, then that covers SOR 2000-6, Henriksen replied – the only additional action I see is that we need to check on the status of Brownlee storage. Also, as I said, in the absence of a waiver from the State of Idaho, reducing Dworshak outflow to 2 Kcfs does not appear to be feasible at this time. And Bullets 3 and 4 are already being implemented? Silverberg asked. Bullet 4 is a million miles beyond our scope, Bettin replied – that's not something we could even come close to doing. Also, said Henriksen, Bullet 3 in SOR 2000-6 is different from what was in SOR 2000-5's Bullet 2; the way we plan to approach this is to maintain 2.5 feet of depth over the Ives Island gauge No. 2, not to operate to a particular outflow or tailwater depth at Bonneville. Is that a correct statement? Silverberg asked. That's what we want, Yoshinaka replied – to protect the redds during the emergence period. Also, said Bettin, do you have any idea when the emergence period will end this year? I'll have to check on our estimate of that date when I get back to my office, Yoshinaka replied. That would be helpful, said Bettin.

So does this meet your collective needs? Silverberg asked. What we were shooting for was to store as much water into Grand Coulee, at this point in the season, as possible, Yoshinaka replied; it sounds as though the limitation is Grand Coulee's April 10 shifted flood control elevation of 1258 feet. Obviously, we would like the Corps to store more, if possible, he said. Henriksen said she will check on the feasibility of storing additional water into Grand Coulee during the early spring period, and will report back at the next TMT meeting. In response to a question from Richelle Harding, Bettin observed that if Grand Coulee storage is increased, it will not be possible to maintain 105 Kcfs at Priest Rapids – that's another conflicting requirement in this SOR. Basically, he said, it just isn't possible to do everything this SOR requests. Henriksen noted that current flows at Priest Rapids are barely 100 Kcfs; if you store more water at Grand Coulee, you will be reducing Priest Rapids flow to less than 100 Kcfs.

Chris Ross said that, in NMFS' view, given water supply conditions in 2000, it would not be problematic if Grand Coulee was above its flood control elevation on April 10, as long as the April 30 flood control elevation is met – it's simply a shaping question, and if Grand Coulee is a little fuller than planned on April 10, the reservoirs will still be full, to the maximum extent possible, and that would leave more of the natural runoff available for the fish. The question is whether the Corps and NMFS would be willing to shape flows in this manner mid-month, and still meet the April 30 flood control target – from NMFS' perspective he said, the answer is yes.

At the March 17 FPAC call, said Henriksen, we talked about the April 15 flood control target at Grand Coulee, and whether or not the Corps would be willing to shape above the April 15 target and still meet the April 30 flood control requirement; my answer was, and still is, yes, she said. If you prefer, she said, we can meet the April 10 flood control elevation; the Corps is willing to shape above the April 15 target, with the understanding that the April 30 target is a hard constraint.

So how far below 105 Kcfs at Priest Rapids are the salmon managers willing to go in order to store more water at Grand Coulee? Bettin asked. It's hard to say right now, without seeing the run projections, Wagner replied. We'll discuss that information, and develop another SOR at tomorrow's FPAC meeting, Yoshinaka said.

VII. Next TMT Meeting Date and Agenda Items.

The next meeting of the Technical Management Team was set for Thursday, March 30, from 9 a.m. to noon at the Customs House. Meeting notes prepared by Jeff Kuechle, BPA contractor.

TMT ATTENDANCE LIST

MARCH 27, 2000

Jacqueline Abel	Facilitator	503/282-5920
Scott Bettin	BPA	503/230-4573
Scott Boyd	COE	503/808-3943
Dick Cassidy	COE	503/808-3938
Kim Fodrea	Reclamation	503/872-2802
Richelle Harding	D. Rohr & Associates	503/771-7754
Cindy Henriksen	COE	503/808-3945
Tim Herzenrader	Enron	503/464-7462
Jim Litchfield	Consultant	503/222-9430
Christine Mallette	ODFW	503/872-5252 x 5352
Mark Mayer	Enron/PGE	503/998-8779
Kevin Nordt	PGE	503/464-7240
Donna Silverberg	Facilitator	503.248-4703
Patty Smith	BPA	503/230-7349
Chuck Tracy	ODFW	503,872-5252 x 2428
Rudd Turner	COE	503/808-3935
Paul Wagner	NMFS	503/2301-2316
Marv Yoshinaka	USFWS	360/696-7605

On Phone:

Name	Affiliation	Phone
Margaret Filardo	FPC	503/230-4286
Jim Nielsen	WDFW	360/902-2812
Steve Pettit	IDFG	208/799-5010

TECHNICAL MANAGEMENT TEAM

BOR: *Kim Fodrea\Pat McGrane*

NMFS: *Paul Wagner\Chris Ross* BPA: *Scott Bettin\Robyn MacKay*

USFWS: *Marv Yoshinaka\Bob Hallock\Susan Martin*

OR: *Christine Mallette \Chuck Tracy* WA: *Jim Nielsen* ID: *Ed Bowles\Steve Pettit*

MT: *Jim Litchfield* COE: *Cindy Henriksen\Rudd Turner*

COLUMBIA RIVER REGIONAL FORUM

TECHNICAL MANAGEMENT TEAM

RE: March 30, 2000 Meeting

FACILITATOR'S NOTES ON FUTURE ACTIONS

Facilitators: **JACQUE ABEL**

The following is a list of items that the Technical Management Team (TMT) discussed at its last meeting that will require future action or discussion.

1. Minutes from the March 27 meeting are not yet available, but will be posted on the TMT homepage as soon as they are.
2. Joe Lucas gave and update on Hanford Reach. He invited TMT members to participate in upcoming Hanford Policy Group conference calls which will take place every two weeks. The first one is this Friday at 9 AM for approximately one hour. Joe will be on the phone for TMT meetings to give an update every week during the season. He will also send the Year 2000 program for this project to be posted on the homepage.
3. As part of the review of this week's reservoir operations, Cindy distributed a bar graph entitled "Volumes at Dworshak" and the group agreed that this is a useful format and it should be posted on the homepage.
4. The Fish Passage Center is working on a request from TMT to depict fish passage data differently than in the past. Margaret Filardo was not able to give a date when this will be available, but agreed to try for April 13, and pointed out the information is available in the old format in the meantime.
5. The SOR Disposition chart was reviewed as a tool that will be used every week during the season. The COE will try to clean up and fill in some of the missing information from recent dispositions and post a new version on the homepage early next week, so that it can be discussed at the April 6 meeting. Some changes that need to be made to the summary of last week's disposition were noted and will be made by the COE.
6. The COE agreed to check with field personnel about TDG monitor readings and report back to TMT at the April 6 meeting, in response to questions about high readings.
7. TMT agreed that they would not support the "Proposal for a Regional Water Temperature Monitoring Plan and Protocol for the Snake River" which was presented to them by Rich Domingue of NMFS.

8. After a presentation by Paul Wagner and John Yearsly about water temperature modeling, Cindy agreed to come to the next TMT meeting with other possible scenarios that could be modeled. The group will discuss them 10-15 minutes on April 6. John Yearsly agreed to return for further discussion with TMT on April 20. Copies of John's materials will be made available either at the next meeting, or will be sent out to people who signed the sheet to receive them.

PROPOSED AGENDA ITEMS FOR THE APRIL 6 TMT MEETING (from 9 AM to 1 PM):

- * Full discussion of the goals, objectives and criteria for TMT Decision-Making Criteria (most of the meeting time will be for this item, all of the other items need to be brief)**
- * Hanford Reach Update (Joe Lucas)**
- * Waiver Update (Paul Wagner)**
- * Review updated SOR Disposition chart as part of review of this week's reservoir operation requests**
- * Review new system operation requests**
- * COE report on checking with field personnel about TDG monitor readings**
- * Other possible scenarios to be modeled re: today's discussion of Paul and John's presentations (10-15 minutes, Cindy)**

TECHNICAL MANAGEMENT TEAM

MEETING NOTES

March 30, 2000

CORPS OF ENGINEERS NORTHWESTERN DIVISION OFFICES – CUSTOM HOUSE

PORLAND, OREGON

DRAFT

I. Greeting and Introductions

The March 30 Technical Management Team meeting, held at the Custom House in Portland, Oregon, was chaired by Cindy Henriksen of COE and facilitated by Jacqueline Abel. 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.

Abel welcomed everyone to the meeting, then led a round of introductions and a review of the agenda.

II. Review of Last TMT Minutes.

Abel noted that the minutes from last meeting are not yet available, but will be posted to the TMT website as soon as they are received.

III. Water Temperature Modeling.

Wagner provided an introduction to this agenda item, touching first on the value of flow augmentation. He said he is somewhat surprised to hear the value of summer flow augmentation called into question on a fairly regular basis; what the R-squares show is that, when we augment flows from the Snake River, there is a clear incremental benefit to survival for every increment of flow we put into the river – in short, he said, there is a linear relationship that links the two.

The same is true of temperature, Wagner said, only the R-squares are even better. Consistently, what we've seen is that, the cooler the water temperature in the Snake River, the better the survival, Wagner said.

The group spent a few minutes discussing the methodology used by NMFS to reach these conclusions, with various TMT participants expressing skepticism about the results of the NMFS flow/survival and water temperature/survival analyses. Ultimately, NMFS' Rich Domingue noted that these analytical methods were developed by NMFS' Northwest Science Center as their best shot at analyzing this data – it may be imperfect, he said, but it is our best approach. Mary Lou Soscia added that she has heard that CRI is coming out with some new information on temperature, which may help clarify this issue in the near future.

Wagner said the NMFS analysis also clearly shows that, in most years, the peak of the juvenile migration season is July 1-July 30. That is the time-frame when temperature management is most important, he said, because keeping temperatures cooler in July benefits the most Snake River migrants. As the TMT is aware, he said, we asked the Corps to model a number of different flow augmentation scenarios involving Dworshak and Brownlee reservoirs; these included Scenario 7, under which Dworshak would release 20 Kcfs beginning July 1. Scenario 7 had a dramatic effect on temperatures; it kept them low early on, but they were higher later in the summer, because you would essentially run out of Dworshak water during the first week in August. What all of these scenarios showed is that, the longer you wait to release the cooler Dworshak water, the higher the temperature got, according to the Corps' model, said Wagner.

The bottom line is that 20 degrees C is the threshold at which you begin to see serious negative biological impacts from water temperature, Wagner said; what both the Corps' ColTemp model and John Yearsley's EPA model show is that, if we didn't augment out of Dworshak and did nothing to reduce temperatures in the system, by the late summer period, Snake River water temperatures would be in the 22-23-degree C range. Henriksen noted that this phenomenon has not been noted in recent year, when several different temperature augmentation scenarios have been implemented using Dworshak. In 1996, continued Henriksen, the TMT agreed to implement the Idaho Plan, where the Dworshak water was used to augment flow and reduce temperature beginning mid-August. During that year, the TMT agreed to monitor temperature and fish mortality. Although water temperature got as high as 20-degrees C, the TMT did not find the need to make reactionary operational changes in response to poor fish condition. With properly-managed flow augmentation from Dworshak, we can reduce peak water temperatures in the mainstem Snake by 2-3 degrees C, said Wagner.

Wagner went through some of the other operational scenarios modeled by the Corps and EPA, including Billy Connor's suggested operation, under which Dworshak would release 12 Kcfs beginning July 8, followed by a week at 20 Kcfs, after which the project would release 15 Kcfs, then 12 Kcfs until the Dworshak storage is exhausted. What the models show is that this does have a moderating effect through the season, particularly in July, during the peak of the migration in most years, Wagner said.

Mary Lou Soscia then introduced John Yearsley's presentation by observing that the model was a tool developed by EPA to begin to understand the temperature problems in the Columbia River Basin as a whole. One thing we wanted to be able to understand was the relative temperature contributions of the tributaries and the dams, she said; this model does that. It will now be used to develop a TMDL for the mainstem, Soscia said; we will be developing that TMDL in close association with the states of Oregon, Washington, Idaho and the Columbia River tribes.

We understand that the model isn't very user-friendly right now, Soscia continued; we're working to make it

more user-friendly, so that people in the region can use it as a tool to understand temperature problems in the basin. I think we all know that temperature is a very important ecosystem indicator, Soscia said; we also know that it's a very difficult problem to solve.

Soscia noted that, early on, there were some perceived conflicts between the Corps and EPA temperature models; the good news is that, in our recent work, we don't see those conflicts at all – we actually see some similarities between the two models, she said, and we're very interested in trying to figure out how to share these tools and use them to move forward. Henriksen asked if the EPA model had been peer reviewed by the ISAB. Yearsley said that it had not.

With that, John Yearsley then gave the TMT a detailed overview of his EPA temperature model, working from a series of overheads (available from the TMT website). He touched on the background for this model, the Columbia River Temperature Assessment, the data sources, assumptions and methodology used, EPA model results from the 10 NMFS-proposed and two Nez Perce-proposed simulations, the rigorous EPA peer review process, and the Grand Coulee and Lower Granite model two-dimensional temperature models now under development. He noted that the EPA model covers the Columbia River from Grand Coulee to Bonneville, and the Snake and Clearwater Rivers up to Dworshak Dam on the Clearwater and the Grande Ronde on the Snake. Please refer to Yearsley's overheads for details of his presentation.

At the close of Yearsley's presentation, Abel noted that Yearsley has indicated that he would be willing to come back to a future TMT meeting to discuss the EPA model further. Various TMT participants indicated that this would be helpful; it was agreed to ask Yearsley to attend the April 20 TMT meeting. At Litchfield's suggestion, Henriksen agreed to provide Yearsley data on a different flow year, so that he can run the same simulations using different runoff shape and air temperature assumptions.

IV. Snake River Water Temperature Monitoring Plan.

Domingue distributed his "Proposal for a Regional Water Temperature Monitoring Plan and Protocol for the Snake River," prepared by the Water Temperature Monitoring Committee of the Water Quality Team. Domingue provided a brief overview of the history behind the development of this plan, noting that its purpose was to define what it is the region would like to know, in addition to what it currently knows, about water temperature conditions in the Snake River Basin. Those deliberations resulted in this proposal for the development of multi-level water temperature monitoring and modeling in the Snake River upstream from Lower Granite Dam up to Brownlee and Dworshak, Domingue said.

Domingue spent a few minutes going through the main components of his plan, ultimately noting that, due mainly to concern over the cost of this proposal for the amount of useful practical knowledge it would yield, the both the WQT and FPAC have declined to endorse the Snake River Water Temperature Monitoring Plan and Protocol in its current form. Abel took a poll of the TMT membership, asking how many supported the plan as outlined; there was no TMT support for this proposal.

V. Update on Idaho Waiver of TDG Standard.

There isn't much to report here, said Paul Wagner; NMFS has drafted a response to the Nez Perce and Idaho letter, and have called the Nez Perce Tribe to tell them that we do not view the conditional waiver we have been granted as such. For that reason, said Wagner, we will not be exceeding the 110% TDG standard below Dworshak until we resolve this issue. The Nez Perce have indicated that they are willing to discuss this issue, said Wagner; we've tentatively set Monday, April 3, as the day to begin those discussions. I should have a further update at the April 6 TMT meeting, he said.

VI. Review of This Week's Reservoir Operations.

Henriksen distributed the first TMT spreadsheet run of the year, and spent a few minutes going through its

contents. Marv Yoshinaka asked when outflow from Dworshak will be increasing; Dworshak Hatchery personnel would like to know when that project will begin drafting for flood control so that they can tie in their release with that event. According to this spreadsheet, the Dworshak flood control releases could begin as early as Tuesday, April 4, Henriksen replied; however, the new Water Supply Forecast, which will be released on Monday, is expected to be somewhat smaller for that basin. That means the April 30 flood control target at that project could go up, she said, which means Dworshak outflows could be somewhat less than what is shown in this spreadsheet for the month of April.

One TMT participant asked whether there is any flexibility associated with the April 30 flood control dates at the various storage projects; Henriksen replied that little or no flexibility exists to be above April 30 flood control elevations. Projects can always be evacuated below April 30 flood control elevation, provided that operation does not violate any other project operating limit – any flexibility in the Corps' flood control operations will occur after the April 30 targets have been met.

The group spent a few minutes discussing the various assumptions that went into this early spreadsheet; Henriksen then said that, in response to a request at an earlier TMT meeting, the Corps had put together a bar chart showing projected storage volumes at Dworshak for the April 30-June 30 period – the projected total volume in the Water Supply Forecast, inflow to date, minimum outflow volume, volume remaining to fill from current pool elevation to full (elevation 1600), and the end-of-June volume for augmentation. Henriksen noted that the 976 KAF remaining storage for flow augmentation equals out to 5.5 Kcfs per day from April 30 through June 30. This document will be available via the TMT homepage, she said, and will be updated regularly as new information comes in. There was general agreement that this new graph will be an extremely useful in-season management tool.

Henriksen added that the TMT had requested that the Fish Passage Center develop a "fish hydrograph;" is there a status report on that project? she asked. We're looking at some different ways to present that data, and I hope to have that soon, Margaret Filardo replied. Would it be reasonable to expect that by April 13? Henriksen asked. It may be – I'll have to check, Filardo replied.

VII. New System Operational Requests.

No new SORs were submitted prior to today's meeting; Yoshinaka said the salmon managers are requesting that the operations laid out in SORs 2000-5 and 2000-6 be continued through this week. Henriksen said that the SOR disposition matrix is now up and running; there is still some work to be done to bring this fully up to speed, she said, but we should have this updated by Monday or Tuesday of next week. She added that, while the SORs and the resulting weekly operations will be tracked using this matrix, the weekly TMT minutes will provide a detailed description of the give-and-take and discussion on each of the SORs as they come in through the season. She asked anyone with questions about the disposition of a given SOR to review the notes, because they will be the repository of the most complete record of the discussion of each SOR.

VIII. Recommended Operations.

Henriksen noted that, based upon the requested operations in these SORs, Grand Coulee and Dworshak will operate within the limits of their April 10 flood control targets; Grand Coulee, Dworshak and Brownlee will also be operated within their April 30 flood control upper limits.

We also talked about working Brownlee into the flood control equation, said Chuck Tracy, since the current observed elevation is below its calculated flood control elevation. I talked to our flood control folks, said Henriksen, and that's not something we have a mechanism to do at this time – even if we did, I don't know that it would make a significant difference in Grand Coulee operations between now and April 10. What do you mean by "mechanism?" Tracy asked. We don't have a methodology to make a calculation like that, Henriksen replied – it's something we haven't explored, technically, so I can't really give you an answer on that issue. The Dworshak/Grand Coulee flood control shift has been studied in the past, so we understand how that works,

Henriksen said – the concept of one project choosing to operate below its flood control elevation isn't something we've studied in the past. Robyn MacKay observed that the federal projects are one thing, but when you're dealing with a non-federal reservoir, you can't make that project's operator keep that space available.

The group devoted a few minutes of discussion to the question of what flexibility may exist, in terms of shifting some of the FCRPS flood control operation to the Canadian projects, possibly through the use of credits; ultimately, Henriksen observed that the 1995 Biological Opinion was developed with flood control in mind. Since then, she said, the Corps has consistently operated the projects to achieve those flood control objectives; I am somewhat baffled as to why the Corps is constantly questioned about its flood control operations – how far we can be above it, what shifts are possible etc. I'm simply following the guidance that was laid out by NMFS in their 1995 Biological Opinion.

The questions have to do mainly with how flood control works, and what flexibility exists to modify operations within those constraints, Wagner replied. We are curious about the possibility of any shifts in flood control operations that have the potential to benefit fish by moving as much of the flood control releases as possible into the period when the fish are actually migrating through the system, he said. While we can all appreciate the need for flood control, from a risk management standpoint, the idea behind the questions to which Cindy referred is simply to test whether flood control and flow augmentation might work more harmoniously together.

Filardo said the Fish Passage Center has noticed that the TDG monitors in the system have been reading anywhere from 3% to 6% high, without any spill in the system. Since we're about to begin the spill season, she said, if this problem is not corrected, it could affect the spill volumes we see at the various projects. Does the Corps have any idea why this is occurring?

Scott Bettin observed that this happens every year; something occurs in the early spring which causes the gauges to start reading a little higher than normal. My concern is that, this year, they're reading higher than they ever have at this point in the season, Filardo said – with no spill occurring, there is no reason why we should be seeing TDG readings in the 105%-107% range. We also notice a corresponding annual reduction of 3%-5% in the readings several weeks into the spill season, Henriksen said – in short, this is not uncommon, and may have to do with water temperatures in the system. She added, however, that she will mention this problem to the Corps' field personnel, and ask them to make sure all of the monitors are reading correctly; she will then provide an update at the April 6 TMT meeting.

IX. Other.

A. IT Report Information. Henriksen spent a few minutes going through the contents of her planned report at the April 5 IT meeting – the first TMT spreadsheet of the year, the status of the Water Management Plan and the TMT Guidelines. With respect to the latter item, she said, I believe that, after Monday's TMT meeting, the Guidelines are now 99% final for 2000. Final comments on the 2000 Water Management Plan are due April 6, she added; our goal, again, is to finalize both products, to the greatest extent possible, at the April 13 TMT meeting. I will also be reporting to the IT that we are continuing to work on our Goals and Objectives appendix, Henriksen said. You may also want to touch on the flood control shift, and the fact that we are going to be expanding the 2000 Water Management Plan to cover the fall and winter operations called for in the 2000 Supplemental ("Chum") Biological Opinion, said Nielsen. Good points, said Henriksen.

B. Hanford Reach Stranding Report. Joe Lukas said he assumes that most TMT participants are familiar with the Hanford Reach fish protection program; he noted that this year's program is very similar to last year's, except that the rewetting provisions are no longer in place. Otherwise, he said, the operational constraints are the same as last year's. The other change in 2000 is that the start and stop dates will be a little different, and will be based on the seining of index sites. The calculated start date for emergence in 2000 was March 20, said Lukas; index seining began a week prior to that. The criteria for 2000 was when the sample size at the six index sites reached a total sample of 50 fish, the fish protection operation would begin the following day; 287 fish were sampled on March 19. This wasn't reported until the following day, however, so the actual fish protection operations began March 21. We have implemented a +/- 20 Kcfs flow band at the projects, said Lukas; for the

week of March 21-26, weekly average flows through the reach were 101 Kcfs. We were able to stay within the +/- 20 Kcfs flow band during that period, although we did see a fairly sharp reduction in flow during the Friday-Sunday period.

Lukas noted that a total of 77 random sites were monitored last week; field personnel sampled a total of 16 subyearling fall chinook, only one of which was a mortality. Lukas noted that seining at the index sites will continue throughout the emergence season; we will monitor both abundance and fish size, he said. This Monday, we found 82 fish at the index site, average fork length just under 42 mm. Lukas added that the Hanford Reach policy group will be scheduling bi-weekly conference calls every other Friday morning; the first call is set for tomorrow morning at 9 a.m. The number for these conference calls is 888/476-3752, participant code 600445; any TMT participants who would like to join these calls is welcome to do so.

With respect to the drop in weekend flows, said Yoshinaka, the salmon managers discussed ways to smooth out or avoid that drop-off; what BPA told us was that sufficient flow was provided from Grand Coulee during the week so that this drop wouldn't occur – it was up to the Mid-Columbia PUDs to manage that water through the weekend. That's not the understanding of the program, Lukas replied – the program is a within-day fluctuation band. There is no requirement that says the PUDs have to draft every bit of active storage in an attempt to match weekday flows, he said. So the email from BPA, which talked about the 40 Ksfd committed to maintaining flows out of the PUD projects was incorrect? Jim Nielsen asked. Yes, Lukas replied – that person was mistaken, and we are not planning to shape the flows that come to us over the weekend to match weekday flows.

One other administrative detail, said Henriksen – last year, you posted weekly updates on the fish protection operation to the TMT homepage. Do you plan to do that again this year? Yes, by Monday afternoon or Tuesday morning, Lukas replied – I was a little late this week, but I think I posted that yesterday.

X. Next TMT Meeting Date and Agenda Items.

The next meeting of the Technical Management Team was set for Thursday, April 6, from 9 a.m. to noon at the Customs House. Meeting notes prepared by Jeff Kuechle, BPA contractor.

TMT ATTENDANCE LIST

MARCH 30, 2000

Jacqueline Abel	Facilitator	503/282-5920
Dick Cassidy	COE	503/808-3938
Rich Domingue	NMFS	503/231-6858
Margaret Filardo	Fish Passage Center	503/230-4286
Kim Fodrea	Reclamation	503/872-2802
Richelle Harding	D. Rohr & Associates	503/771-7754
Cindy Henriksen	COE	503/808-3945

Tim Herzenrader	Enron	503/464-7462
Jim Litchfield	Consultant	503/222-9430
Robyn MacKay	BPA	503/230-3385
Christine Mallette	ODFW	503/872-5252 x 5352
Jim Nielsen	WDFW	390/902-2812
Chuck Tracy	ODFW	503/892-5252 x2428
Glen Traeger	Avista Energy	509/495-4053
Rudd Turner	COE	503/808-3935
Maria Van Houten	Enron	503/464-7961
Paul Wagner	NMFS	503/231-2316
John Yearsley	EPA	
Marv Yoshinaka	USFWS	360/696-7605
Nancy Yun	COE	503/808-3937

On Phone:

Name	Affiliation	Phone
Scott Bettin	BPA	503/230-4573
Steve Hemstreet	Avista Energy	
Joe Lukas	Grant County PUD	
Curt Miller	PGE	
Steve Pettit	IDFG	208/799-5010

TECHNICAL MANAGEMENT TEAM

BOR: Kim Fodrea\Pat McGrane

NMFS: Paul Wagner\Chris Ross BPA: Scott Bettin\Robyn MacKay

USFWS: Marv Yoshinaka\Bob Hallock\Susan Martin

OR: Christine Mallette \Chuck Tracy WA: Jim Nielsen ID: Ed Bowles\Steve Pettit

MT: Jim Litchfield COE: Cindy Henriksen\Rudd Turner

COLUMBIA RIVER REGIONAL FORUM

TECHNICAL MANAGEMENT TEAM

RE: April 6, 2000 Meeting

FACILITATOR'S NOTES ON FUTURE ACTIONS

Facilitators: JACQUE ABEL

TECHNICAL MANAGEMENT TEAM

MEETING NOTES

April 6, 2000

**CORPS OF ENGINEERS NORTHWESTERN DIVISION OFFICES – CUSTOM HOUSE
PORTLAND, OREGON**

DRAFT

I. Greeting and Introductions

The April 6 Technical Management Team meeting, held at the Custom House in Portland, Oregon, was chaired by Cindy Henriksen of COE 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.

Silverberg welcomed everyone to the meeting, then led a round of introductions and a review of the agenda.

II. Review of Last TMT Minutes.

Henriksen noted that the minutes from last meeting are not yet available, but will be posted to the TMT website as soon as they are received.

III. Hanford Reach Update.

Joe Lukas of Grant PUD said he had posted his report to the TMT website late last night. In the future, he said, I will try to post the weekly report by Monday night or Tuesday morning. Basically, for the period of March 27 through April 2, the daily average flow at Priest Rapids hovered around 100 Kcfs, while the weekly average flow was about 105 Kcfs. From Tuesday through Friday, he said, we were easily within the 40 Kcfs flow band; on Sunday, flows were slightly upside. On Sunday, through the field monitoring effort, we received an emergency flow request, because low flows on Sunday had resulted in some fish entrapment that reached near-lethal levels. We responded by increasing flows from the low 70 Kcfs range to around 110 Kcfs, Lukas said.

We monitored at 43 random sites earlier in the reach; we found 39 stranded fall chinook mortalities, all of which were dead, Lukas continued. In our index monitoring, we saw relatively low numbers of fish in entrapments. This week, flows on the rolling seven-day average have been in the 108 Kcfs range; again, we have been able to stay within the 40 Kcfs flow band.

IV. Idaho TDG Exemption Update.

Chris Ross said NMFS received a waiver from the Nez Perce Tribe and the State of Idaho, for the full season – spring and summer – to exceed the 110% TDG standard, up to 120% TDG. The package that was sent also had a number of other stipulations about operations at Dworshak and process, said Ross; we've had discussions with the Nez Perce representatives, and, in short, NMFS does not agree with the full package. Discussions are still ongoing about what the final waiver will entail, Ross said; I'll provide a further update at next week's TMT meeting.

In response to a question, Kim Fodrea said the Idaho Legislature is expected to sign a one-year extension of the legislation authorizing the release of the 427 KAF in Upper Snake flow augmentation water some time today. No promises, she said, but that, at least, is the rumor.

Silverberg observed that, at yesterday's IT meeting, it was noted that the Nez Perce Tribe feels disenfranchised by the TMT process, because they don't have the opportunity to participate; the Nez Perce have asked the TMT to look at ways to bring the tribe and the State of Idaho more effectively into their process. It was suggested, at the IT meeting, that there be a TMT meeting in Lewiston some time in early July, Silverberg said; you may want to put that on your calendars. For the record, said Henriksen, earlier this winter, Jim Yost assured me that either he or Rayola Jacobsen would be attending all of the TMT meetings from here on out; neither is here today. Still, said Silverberg, it would be a show of good faith if we could schedule a TMT meeting in Idaho at some point this season.

V. Scenarios for EPA Temperature Model.

Henriksen said she and Scott Bettin will have these scenarios tomorrow; as you'll recall, she said, the idea was for us to pick an average water and temperature year and do some base-case modeling. The scenarios will be available at next week's meeting, she said.

VI. Review TMT Decision Criteria, Goals and Objectives.

A. 2000 TMT Guidelines. Henriksen distributed copies of the final draft TMT Guidelines, dated April 3. I have revised this draft to reflect the comments and discussion at the March 27 and March 30 TMT meetings, she said; the result is what I'm now calling a final draft. Henriksen went briefly through the changes she has made to this document, and asked that any additional comments be provided to her by Tuesday, April 11. The TMT will then review and finalize this document at the April 13 meeting.

B. 2000 Water Management Plan. Henriksen distributed the most recent draft of the 2000 Water Management Plan, dated April 3. She noted that all edits to this document are marked in legislative format; the group spent a few minutes going through these changes.

Christine Mallette requested the addition of a brief section detailing the levels of sensitivity or flexibility associated with the various seasonal flood control targets; for example, she said, the April 30 flood control elevations are very important, and there is little or no flexibility associated with them. However, nowhere in the text is that made clear. Unfortunately, said Henriksen, it's not a topic that lends itself to a one-paragraph description – the flood control operating plan is a large book, and the in-year operating plan is updated monthly, using a three-dimensional equation. After a few minutes of discussion, Bettin suggested that the addition could be as simple as a paragraph that says that the Corps is the agency with flood control authority; any changes to the flood control operation need to be requested through the Corps, which will review them on a case-by-case basis.

Litchfield added that he has been asking Brian Marotz of Montana Fish Wildlife and Parks to recalculate the IRCs; don't the Corps and BPA calculate IRCs as well? Litchfield asked. No, Henriksen replied – I've talked to Brian about this as well, because the Corps doesn't know what version of the relevant software to use. We're supposed to be considering the IRCs, she said, but I don't know what the IRCs are for this year.

As best I can tell, said Litchfield, the model, which MtFWP has made a lot of changes to, is misbehaving in some way – it is calculating anomalous flows, and they're currently trying to diagnose that problem. I've been pressuring MtFWP to give me an answer as soon as possible, he said, but there is no way to know when that will happen. Bettin said this probably won't become a critical problem until refill is achieved, and the TMT begins to discuss the draft limits in the late summer period. My concern is the potential effects of the Libby sturgeon pulse on refill at that project, Litchfield said – that could be an issue.

Ultimately, Bettin said the TMT should be OK for the next two months, because flood control will be driving operations until then. Basically, said Litchfield, I know we're holding things up, from a planning standpoint, so I'm pushing for an answer as soon as I can get one from NMFS.

C. TMT In-Season Management Criteria – Objectives and Triggers. The last part of the meeting was focused on a detailed discussion of the March 27 draft of the "TMT In-Season Management Criteria – Objectives and Triggers" document. Various comments, suggestions and changes were made to this document, focused on the Lower Columbia objectives and triggers, and the Bonneville objectives and triggers. Henriksen said she will incorporate the changes agreed to at today's meeting into a new version of this document prior to the April 13 meeting; it was agreed to resume this discussion with The Dalles objectives and triggers at the April 13 meeting. Silverberg observed that work on the in-season management criteria document will likely continue at least through the month of April.

VII. Review of Current Reservoir Operations.

Henriksen said this week's SSARR run has been completed, and copies are available. What it shows is that, in general, we are evacuating storage projects to meet their April 30 flood control elevations, with the goal of achieving refill by June 30 at all projects. The Dworshak flood control shift is shown in this week's spreadsheet.

In response to a question from Jim Litchfield, Henriksen said Dworshak outflow is currently 15.5 Kcfs, which, surprisingly enough, is producing TDG levels which are right at the 110% state standard downstream from that project. Kim Fodrea noted that she is fully expecting the salmon managers to request additional flow from Grand Coulee during the last week in April; she recommended that the salmon managers talk directly to the Spokane and Coeur d'Alene tribes well in advance of that date. To fill in the hole at the end of the month, said Bettin, one option would be to draft the project below elevation 1238; if the salmon managers are going to request that, they need to coordinate that operation with the tribes – the sooner the better. Clearly we need to talk about that, Jim Nielsen replied; we'll discuss it at next week's FPAC meeting.

Ross asked Henriksen to describe the current status of the BiOp spill program. Henriksen replied that, although the action agencies didn't receive the spill program SOR until 4 p.m. Tuesday, they were able to initiate spill at Ice Harbor and Lower Monumental by 6 p.m. that day. Henriksen also requested that same day requests not be repeated, since there is more involved to implement these requests than just pushing a button. At Ice Harbor,

she said, we chose a spill cap of 90 Kcfs, assuming that that operation would keep tailwater TDG levels below 120%; what that meant was that we spilled the entire river – 80 Kcfs-85 Kcfs – until 6 a.m. TDG levels were in the 116%-117% range; we also had Ice Harbor draft to MOP during that period. At Lower Monumental, we selected a spill cap of 30 Kcfs, which is where we ended up last year, Henriksen said; as a result of that operation, we saw tailwater TDG in the 111%-112% range. We then increased the spill cap at that project to 40 Kcfs last night, and saw TDG levels of about 117% below the project. We will therefore be increasing the Lower Monumental spill cap again this evening, she said, adding that Lower Monumental also went to MOP last night. Lower Granite will be at MOP later today.

Henriksen added that Walla Walla District is in the process of recalibrating all of its TDG monitors; the instruments at Ice Harbor and Lower Monumental were calibrated on Tuesday, and both were reading correctly.

A. Status of the Fish Migration. Ross said that, for yearling chinook, daily passage indices at the Salmon River (Whitebird) trap since March 23 have ranged between 164 and 2,022. Comparative indices for yearling chinook in 1999 ranged between 8 and 809. Imnaha trap indices peaked at 7,000 on March 29, then declined to 305 on April 4. Grande Ronde indices have been in the double digits, increasing to 122 on April 5. Snake trap (Lewiston) indices have generally been in the low double digits. Since March 26, daily chinook indices at Lower Granite Dams have increased from 20 to 790. Indices at Lower Monumental are in the 3,900-8,400 range, while numbers at McNary have increased from 460 to 2,400.

With respect to steelhead, said Ross, indices have generally been single-digit at all traps, increasing to double digits at Lewiston and triple digits at Grande Ronde. Indices at Lower Granite have increased from 50 to 2,300. On the PIT-tag front, Ross said two PIT-tagged wild spring/summer chinook were detected at Lower Granite Dam on April 4; another was detected at Little Goose on April 3. Steelhead have been detected in single digits at Lower Granite, Little Goose, Lower Monumental and McNary Dams.

The group spent a few minutes discussing the form in which the Fish Passage Center displays the weekly fish migration data; Henriksen noted that, earlier in the pre-season planning period, some TMT participants had asked whether it might be possible for the Fish Passage Center to develop a "mega-graph," showing passage indices, timing, percentage of run passed, run forecast data etc., in graphic form. What's the status of that product? Henriksen asked. Margaret Filardo replied that the FPC is in the process of finalizing its cumulative passage graphs.

The group spent a few minutes discussing the TMT's fish passage-related information needs; there was some confusion about what would be most useful to the TMT, and what might be the clearest way to present that information. Ultimately, no specific resolution was reached on this issue; Russ George offered to work with Henriksen to determine precisely what the TMT would like to see, then meet with Filardo, to see when such a product might be available. George said he will try to provide an update on this topic at the April 13 TMT meeting.

VIII. New System Operational Requests.

Prior to today's meeting, the salmon managers (ODFW, USFWS, WDFW, NMFS, IDFG and CRITFC) submitted SOR 2000-7, which requested the following specific operations:

- **GOAL:** Initiate spill to provide the highest survival benefit to juvenile salmonid migrants. Begin MOP operation to decrease fish travel time through the reservoir.
- Initiate spill beginning today at Lower Monumental and Ice Harbor Dams. Pending resolution of the 2000 spill negotiations, spill should be implemented as described in the 1998 supplemental Biological Opinion. Spill to the gas cap at Lower Monumental Dam from 6 p.m. to 6 a.m. daily. At Ice Harbor Dam, spill to the gas cap during nighttime hours (6 p.m. to 6 a.m. and to 45 Kcfs during daytime hours. An additional request for spill at Lower Granite and Little Goose dams is pending dependent on fish movement.
- By 6 p.m. on April 4, begin to draft Lower Granite, Lower Monumental and Ice Harbor pools to MOP. The draft operation should be completed within a 24-hour period. The request to go to MOP in Little Goose

pool is pending dependent on fish movement.

The full text of this SOR is available via the TMT website; please consult this document for full justification and other details.

Nielsen noted that SOR 2000-7 has essentially already been implemented; everything requested here has been done except achieving MOP at Lower Granite, and you're working on that, he said.

Silverberg noted that, at a previous TMT meeting, there was agreement to make a few format changes to the SORs in 2000. First, she said, we agreed that, rather than "The following state and federal salmon managers have participated in the preparation of this SOR," the SOR would say "The following state and federal salmon managers support this SOR." The other request, she said, had to do with the designation and numbering for each SOR; I believe we agreed that future SORs would be identified, by supporting entity, through the use of initials – SM-2000-7 for "Salmon Managers," CRITFC-2000-1 for CRITFC etc.

Nielsen replied that the "salmon managers" designation is something of a hot-button issue; the tribes, rightfully, believe they are salmon managers as well, and if they choose not to participate in the development of a given request, it would not be accurate to say that it is supported by all of the salmon managers. Pick any acronym you want, said Bettin – my only concern is clarity about who is requesting what. We'll talk about it at FPAC, said Nielsen.

Nielsen noted that there may be additional operational requests associated with SOR 2000-7; the request for spill at Lower Granite and Little Goose dams, and the request to go to MOP at Little Goose, will be made based on fish movement data. Nielsen noted that the Lower Granite steelhead indices have increased significantly since Tuesday, when this SOR was developed; McNary steelhead indices are on the rise as well. We aren't requesting that spill start at McNary at this point, Nielsen said, but this is a heads-up that it could happen soon. Bettin noted that we may begin seeing some involuntary spill at McNary soon, due to hydraulic capacity.

At Lower Granite, said Nielsen, I think it would be appropriate to begin to spill up to the gas cap outside of spill test hours, beginning tomorrow night.

Prior to today's meeting, the salmon managers (ODFW, USFWS, WDFW, NMFS, IDFG and CRITFC) also submitted SOR 2000-8, which requested the following specific operations:

- Weekend daily average flows at Priest Rapids Dam should not fall below the previous five days average flow.
- Until further notice, weekend daily average flows at Grand Coulee should be managed to provide adequate inflow through the Mid-Columbia projects, to allow the Mid-Columbia parties to maintain the requested weekend flow levels.
- A 20 Kcfs variation around the daily average flow is acceptable according to the terms of the Hanford Reach Juvenile Fall Chinook Protection Program.

The full text of this SOR is available via the TMT website; please consult this document for full justification and other details.

Nielsen went briefly through the contents of this SOR; he noted that, over the weekend, hourly flows at Priest Rapids dropped as low as 63 Kcfs, and some stranding was observed. As a result, he said, we did see some stranding and mortality at the Hanford Reach index sites; the situation was serious enough that we requested a rewetting operation on Monday, April 3. The salmon managers believe stranding could be significantly reduced by maintaining weekend flows at the previous five-day average, Nielsen said.

In the SSARR run we received on Tuesday, said Nielsen, I notice that the Corps is modeling 95 Kcfs outflow from Grand Coulee over the coming weekend. Would that solve this problem? Silverberg asked. It certainly goes a long way toward solving it, Nielsen replied, but the other component is the participation of the Mid-Columbia parties. Lukas observed that the program requested in this SOR is already in place; we also have the emergency

flow provisions, he said, so I don't know what else, exactly, you're asking the Mid-Columbia projects to do, other than operating within the constraints of the fish protection program. I have no authority to do anything other than that, Lukas said.

The purpose of this SOR was to point out that we did have a problem last weekend, and to try to avoid a recurrence of that problem in the future, Nielsen said. Henriksen noted, for the record, that the numbers in the SSARR runs are not carved in stone; they are simply the modelers' best estimates, and actual flows can vary.

So to keep this moving along, said Silverberg, what I think I heard Joe Lukas say is that this SOR will be implemented, because the operations it specifies are already covered under the Hanford Reach fish protection program. That's the way I read it, Lukas replied. I guess all we're saying is that, if last week's operation was an example of operating to the provisions of the fish protection program, it wasn't adequate, Nielsen said. I think that's a very, very subjective call at this point, Lukas replied – we realized that there was a problem, and we responded, under the provisions of the program. We won't know what the numerical effect of that operation was until we complete the evaluation. To me, said Lukas, the fact that we are monitoring, and were able to respond, in real time, is evidence that the program is working. This is probably an issue that needs to be discussed in the Hanford Stranding Policy Committee, said Nielsen; I would strongly suggest that there be a conference call with that group this week. Scott Bettin agreed that it would be appropriate for the Policy Committee to take up this issue. I'll try to set up a call for tomorrow at 9 a.m., said Lukas.

After caucusing with his colleagues, Nielsen added that the salmon managers would like to request that Little Goose be at MOP by midnight Monday, April 10. That should be no problem, Bettin replied, but please let us know if the migration is delayed.

IX. Recommended Operations.

Bettin observed that, if the BiOp spill program is to start tomorrow night, April 7, at Lower Granite, it would be logical to assume that spill at Little Goose will need to begin on Monday night, April 10. As we heard from Jim Nielsen, said Henriksen, there is a request to spill up to the 120% TDG standard at Lower Granite, beginning tomorrow night at 6 p.m., and running through April 10, when the spill test protocol of 20% spill around the clock, plus 4 Kcfs additional through the collection channel, will go into effect. Also, said Henriksen, is Monday the logical night to begin spill at Little Goose? After a brief discussion, the TMT recommended that spill at Little Goose begin on Monday night, April 10, at 6 p.m. Nielsen said the salmon managers will notify Henriksen if perusal of the fish passage data on Monday morning indicates that the fish have not yet arrived at Little Goose, and the spill operation needs to be delayed.

Again, said Henriksen, all of the storage projects are being operated to achieve their April 10 and April 30 flood control target elevations. Fodrea distributed a "teacup diagram" showing the current (April 4) refill status of Reclamation's reservoirs in the Boise and Payette basins (Cascade: 71% full, Deadwood: 75% full, Anderson Ranch: 68% full, Arrowrock: 90% full, Lucky Peak: 72% full, Lake Lowell: 73% full). It was agreed that Fodrea will bring periodic updates of this diagram, particularly as the TMT heads into the summer period.

X. Next TMT Meeting Date and Agenda Items.

The next meeting of the Technical Management Team was set for Thursday, April 13, from 9 a.m. to noon at the Customs House. Meeting notes prepared by Jeff Kuechle, BPA contractor.

TMT ATTENDANCE LIST

APRIL 6, 2000

Scott Bettin	BPA	503/230-4573
Scott Boyd	COE	503/808-3943
Dick Cassidy	COE	503/808-3938
Sean Crandall	ENRON	503/464-3815
Ken Dragoon	PacifiCorp	503/262-4951
Kim Fodrea	Reclamation	503/872-2802
Russ George	WMCI	503/253-1553
Richelle Harding	D. Rohr & Associates	503/771-7754
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Robyn MacKay	BPA	503/230-3385
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Jim Nielsen	WDFW	360/902-2812
Chris Ross	NMFS	503/230-5416
Donna Silverberg	Facilitator	503.248-4703

Stacy Williams	DS Consulting	503/248-9923
Nancy Yun	COE	503/808-3937

On Phone:

Name	Affiliation	Phone
Margaret Filardo	FPC	503/230-4286
Joe Lukas	Grant County PUD	
Curt Miller	PGE	
Steve Pettit	IDFG	208/799-5010

Glen Traeger

Avista Energy

TECHNICAL MANAGEMENT TEAM

BOR: Kim Fodrea\Pat McGrane

NMFS: Paul Wagner\Chris Ross BPA: Scott Bettin\Robyn MacKay

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OR: Christine Mallette \Chuck Tracy WA: Jim Nielsen ID: Ed Bowles\Steve Pettit

MT: Jim Litchfield COE: Cindy Henriksen\Rudd Turner

COLUMBIA RIVER REGIONAL FORUM

TECHNICAL MANAGEMENT TEAM

RE: April 13, 2000 Meeting

FACILITATOR'S NOTES ON FUTURE ACTIONS

Facilitators: Donna Silverberg

TECHNICAL MANAGEMENT TEAM

MEETING NOTES

April 13, 2000

CORPS OF ENGINEERS NORTHWESTERN DIVISION OFFICES – CUSTOM HOUSE

PORLAND, OREGON

DRAFT

I. Greeting and Introductions

The April 13 Technical Management Team meeting, held at the Custom House in Portland, Oregon, was chaired by Cindy Henriksen of COE 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.

Silverberg welcomed everyone to the meeting, then led a round of introductions and a review of the agenda.

II. Review of Last TMT Minutes.

Silverberg noted that the minutes from last meeting are available via the TMT website; the group spent a few minutes reviewing the notes, after which Silverberg asked that any additional comments be provided to Henriksen by 3 p.m. Friday, April 14.

III. Hanford Reach Update.

Joe Lukas of Grant PUD reported that, for the week of April 3-9, weekly average flows at Priest Rapids Dam were about 120 Kcfs. Operations during the week stayed within the prescribed flow band, with flows of 100 Kcfs-110 Kcfs at the bottom end and 130 Kcfs-140 Kcfs at the top end. Fish spill has not yet begun at Priest Rapids, so the projects are continuing to operate within the +/- 20 Kcfs flow band. Lukas said field crews sampled 87 random sites, and found a total of 75 subyearling chinook, 20 of which were mortalities. Weekly index sampling sampled 73 subyearling chinook, average fork length 43 mm. Weekend flows were pretty close to weekend flows, Lukas said, adding that the next bi-weekly Hanford Reach conference call is set for tomorrow at 9 a.m., at 888/476-3752, participant code 600445. In response to a question from Scott Bettin, Lukas said Mid-Columbia fish spill will likely begin early next week.

IV. Idaho TDG Exemption Update.

Paul Wagner reported that NMFS had called the Nez Perce Tribe to let them know that NMFS had problems with some of the conditions attached to the summer period of the 2000 waiver, and that, for that reason, in NMFS' view, no spring waiver is in place. A letter has been sent to both the Nez Perce and Idaho DEQ, requesting that they issue a spring waiver, separate from the summer waiver, Wagner said. We have not yet received that waiver, and have, as yet, heard nothing back from either of the recipients of the letter, Wagner said.

V. Status of Fish Curves.

Marv Yoshinaka said that it was his understanding that a request was made, at the last TMT meeting, for the development of some different fish curves (the "Fish-O-Graph") for juvenile fish. We're still trying to iron out the details of what, exactly, the TMT would like to see displayed in these new curves, Yoshinaka said; we have not yet scheduled a meeting to talk about what will be required.

Henriksen noted that she and Russ George have agreed to participate in that meeting; basically, she said, what we're after is a slightly different way to look at the existing data, overlaying the cumulative passage data on flow data. If we could sit down for an hour or so, she said, we should be able to go quickly through what data is available, and what it may be possible to do, in terms of juxtaposing one data set on another. Jim Nielsen and Margaret Filardo questioned the need for these new curves, wondering what, exactly, they will be used for; Jim Litchfield replied that developing cumulative or discreet probability distributions should be easy, once the basic data is in hand – we're looking for both actuals (tracking), and some predictor of where the run is likely to go, in comparison to, say, a 10-year average, he said. After a brief discussion, it was agreed that Henriksen, Bettin, Litchfield and Kim Fodrea will develop a brief written purpose statement, explaining exactly what they're asking the Fish Passage Center to develop, and how this information will be used.

Later in today's meeting, following the break, Silverberg said she, Bettin and Fodrea had discussed the purpose statement; before she read it, however, Silverberg noted that the reason the action agencies had requested a meeting on this issue was to utilize the expertise of the Fish Passage Center and the salmon managers in its creation. One concern, however, is that anything the action agencies put in writing could be misunderstood or simply sent back as unworkable, said Silverberg.

With that caution in mind, she continued, the purpose of this request is as follows: to have information that will overlay the fish numbers onto the hydrograph. The current data, as reported, goes up, then flattens, because it is cumulative. What they would like to see is a daily or weekly graph of the fish that are coming, as opposed to the cumulative information, so that they can see when fish numbers start to increase and when they start to decrease. Basically, said Wagner, the idea is to take the confidence intervals that are presently presented around the cumulative distribution, and develop a bell-shaped distribution with those same cumulative curves.

Silverberg said that, as Margaret Filardo has noted, the necessary data is available on the web; with that in mind, Kim Fodrea has offered to develop a draft example of what is being requested. Are you thinking about individual graphs for each monitoring station? asked Christine Mallette. Also, are you thinking about graphs showing all species combined, or broken down by species or life-stage? We're not the experts, Betting replied; that's what we're asking you to help us with. I think we probably need to talk about that some more, Yoshinaka said – there are a lot of complexities to this request.

After a few minutes of discussion, Wagner drew a sample graph, which the TMT members present agreed would suit their needs admirably; Wagner said he will share his example with Filardo, with the goal of developing a more detailed sample for discussion at next week's TMT meeting.

VI. Status of Lower Columbia Fish Emergence.

Yoshinaka said the Fish and Wildlife Service had talked to ODFW researchers about chum emergence timing, the end of emergence time for chum is as late as May 1 in below-average river temperature years, around April 8 in average years and as early as March 28 in above-average temperature years. This year, he said, field personnel are still catching newly-emerged chum fry. Fish and Wildlife Service researchers are also still catching newly-emerged chum in Hamilton and Hardy Creeks, he said, so it looks as though emergence is continuing. Yoshinaka added that lower river chinook emergence is likely to continue into May, and possibly into June.

The researchers are also doing stranding and entrapment studies, said Yoshinaka; they've found that fish are being trapped in a depression on Pierce Island when flows get up into the 260 Kcfs-270 Kcfs range, then recede. They checked that site on Tuesday, he said, and found a number of chum and chinook fry. We're looking at ways to prevent that from happening, said Yoshinaka; one of the things we're considering is keeping flows below 260 Kcfs for as long as we can. Once the runoff begins in earnest, and lower river flows exceed 260 Kcfs, it would be best if we can keep them at that level or above, so that the fish aren't isolated, he said. In response to a question from Henriksen, Yoshinaka said the researchers had seined the Pierce Island entrapment and found 400 chinook and a smaller number of chum, which were rescued and returned to the river.

Have the researchers thought about bringing a shovel, and simply digging a ditch from the entrapment to the river? Bettin asked – they could probably do that in an afternoon. We could also think about simply filling in that depression, which was created when the island was recontoured back in the 1930s, he said. I think what Scott is asking is, are there other alternatives that might meet the needs of this particular situation? Henriksen said. It doesn't look possible, at this point, to maintain a constant flow of 260 Kcfs+, Bettin said – Dworshak and Grand Coulee are on fixed operations, and any additional flows are being driven by Mother Nature. After a brief discussion, Yoshinaka said he will check with USFWS researchers to see whether or not the entrapment can be physically modified to create a channel back to the main river, and will report back to the TMT prior to next week's meeting. In response to a question from Silverberg, Yoshinaka said there is no formal SOR associated with this issue at this time; however, it's likely that an SOR will be developed soon.

VII. Upper Snake 427 KAF Update.

Kim Fodrea reported that the Idaho Legislature has now signed off on a one-year extension to the legislation authorizing the 427 KAF of Upper Snake flow augmentation water; the Governor of Idaho is expected to sign the extension later today.

VIII. Scenarios for EPA Temperature Model.

As you will recall, said Henriksen, at the last TMT meeting, we talked about developing an additional scenario for analysis in the EPA temperature model; since then, Scott Bettin and I have been going back and forth, and we can't decide what year to pick. We want to pick an average water and temperature year for the Lower Snake, she said, but there is no such animal – we're leaning toward 1998, but we're still lacking some temperature information from Idaho Power, she said.

Bettin noted that air temperatures were very high in 1998, which could skew the model run results; the bottom line is that picking a year that truly represents a base case is a complicated exercise – you almost need to pick several years, and establish a range. It was agreed that Henriksen and Bettin will continue to work on this problem, and will report back at the next TMT meeting.

Wagner said he would also like to ask the EPA modelers to look at a no-augmentation year, in which Dworshak outflow stays at minimum throughout the season, as well as the scenario suggested by the Nez Perce and Idaho in Attachment A – keep Dworshak full until August 1. I would also like to see the results from the scenario in this year's spreadsheet – start Dworshak outflow at 7.3 Kcfs on July 2, then release 14 Kcfs through the summer, he said. It was agreed that John Yearsley will be asked to run these scenarios, and to attend either next week's TMT meeting or the meeting on April 27, to share his results.

Henriksen asked how this model information may ultimately be used; Wagner replied that it is designed to show the impact of the Dworshak releases on temperatures in the Lower Snake, and how to use the available storage water to provide maximum biological benefit. We've already looked at several bookends of early and late usage of Dworshak storage, said Henriksen. Those model results demonstrate that the timing of Dworshak releases may have some effect on temperature at Lower Granite. None of the models can be used to predict an absolute temperature at Lower Granite, but they may give us an expectation of the trend of the temperature, Henriksen continued. You're right, we have not modeled the pass inflow scenario, so the Corps will start on that one also. We'll try to put together a graph of the difference between the cool, normal, and hot years.

IX. 2000 Water Management Plan and TMT Guidelines.

Scott Boyd noted that the Water Management Plan has been updated to reflect the most recent water supply forecast; he went briefly through the other changes that have been made to this document since the last TMT meeting. He asked whether the TMT feels that Section VII, "Outlook for Meeting Flow Objectives in 2000," needs to be updated to reflect the April final forecast; there was general agreement that this section is adequate as it is. After a few minutes of further discussion, during which several changes were made to the language in this document, there was general agreement that both the 2000 Water Management Plan can now be considered final, although various sections of the WMP will be updated as new information comes in through the season.

With respect to the TMT Guidelines, Henriksen said the version of the Guidelines now on the TMT homepage has been edited to reflect the changes agreed to at the last TMT meeting. The group discussed a minor modification to the public participation section of the Guidelines; in response to a concern raised by Wagner, it was agreed that he will check to be sure that the emergency provisions in the appendix to the Water Management Plan are adequate, from his perspective. It was also agreed that the TMT emergency protocols will be referenced in the body of the Guidelines.

X. Review of Current Reservoir Operations.

Henriksen reported that this week's spreadsheet was prepared on Monday, prior to the completion of the April final water supply forecast. It shows a spring flow target at Lower Granite of 100 Kcfs; since the April final forecast was received, that target has been lowered to 97 Kcfs. For the week ending April 23, headwater projects are operating according to their flood control strategies through the month of April, said Henriksen; they will begin refilling the first week in May, with the goal of filling the storage projects by the end of June.

XI. New System Operational Requests.

Prior to today's meeting, the salmon managers submitted SOR 2000-9, endorsed by ODFW, USFWS, WDFW and IDFG. SOR 2000-9 requests the following specific operations:

- Initiate spill at McNary Dam beginning at 6 p.m. on April 11. Pending resolution of the 2000 spill negotiations, spill should be implemented as described in the 1998 Supplemental Biological Opinion. Spill to the gas cap at McNary Dam from 6 p.m. to 6 a.m. daily.

Yoshinaka provided a brief overview of this SOR, the full text of which is available via the TMT website. He noted that this was written before the spill negotiations were completed. Rudd Turner said there has been involuntary spill at McNary this week; in essence, the operations requested in this SOR are already being implemented. Bettin noted that the volume of spill is the same; it just hasn't been shaped into the evening hours. Beginning tonight, spill will be shaped into the evening hours, and the spill program at McNary will be implemented as outlined in the spill agreement, said Bettin.

Turner noted that the planning date for the commencement of spill at the Lower Columbia projects is April 20; this request is a week early, and it would be helpful if you could tell us what fish passage information has triggered the request at this time, he said. We saw 38,000 steelhead at McNary on April 11, said Wagner; yesterday, a further 13,000 steelhead passed the project. Chinook numbers remain in the 4,000-6,000 range. He noted that NMFS did not endorse this particular SOR; while NMFS does support spill, he said, we felt we could live with the spill that was already being provided at McNary, at least for the time being. The other salmon managers felt that numbers were increasing rapidly, and we wanted to start the spill program at McNary to correspond with what we saw as a large increase in fish numbers, Yoshinaka said.

Prior to today's meeting, the salmon managers also submitted SOR 2000-10, supported by ODFW, USFWS, WDFW, NMFS, IDFG and CRITFC. SOR 2000-10 requests the following specific operations:

- Provide flows for the week ending April 23 as modeled in the flow projections spreadsheet provided by the Corps of Engineers on April 11, 2000.

Yoshinaka went briefly through the contents of this SOR. So what you really mean is do the spreadsheet operation, and flows will be what they are because they'll be augmented by whatever naturally comes down the river, in addition to the operation that Grand Coulee and Dworshak are providing, said Robyn MacKay. Is that a question or a clarification? Silverberg asked. A clarification, Bettin replied, because in reality, we're unlikely to hit the exact numbers shown on the spreadsheet. Basically, we know what the operations will be at Grand Coulee and Dworshak, so any variation in flow from what's shown on the spreadsheet will be natural variation, said MacKay – if it rains hard, we may be well above the flows shown in the spreadsheet, and if it doesn't, we should be pretty close.

XII. Recommended Operations.

Again, said Henriksen, we will be operating the projects to achieve their end-of-April flood control elevations, as shown in the spreadsheet; actual in-stream flows will vary in response to natural flows. I expect Dworshak will release flow only up to the 110% TDG limit for the week ending April 23, she said. And the expectation is that, given that operation, Dworshak will not be down to its flood control elevation by April 30? Litchfield asked. Perhaps, Henriksen replied.

Yoshinaka said the salmon managers are watching fish numbers at John Day closely; based on what we see coming, he said, it's likely that we will request that the spill programs commence at both John Day and The Dalles prior to April 20. We will likely request spill at Bonneville beginning about the 20th, he added. That raises the question of how much spill, said Bettin, given the fact that the chum fry below Bonneville are still emerging and susceptible to gas. We'll probably recommend putting as much water through Powerhouse 2 as possible, Yoshinaka replied – we'll also need to monitor gas levels closely in the Ives channel.

Is there something we can be watching, in terms of a fish number trigger, so that we're not faced with a situation where you call us Friday at 4 p.m. to request spill immediately? Henriksen asked. I can't really give you a hard number right now, Yoshinaka replied – we're looking at trends, as well as the origins of the arriving fish. Still, there must be something that leads you to decide that today's the day, Henriksen said. We discuss the information among the group, Yoshinaka replied. It's easier for us if we can pick a planning date, then modify it, if necessary, said Bettin – given five days' travel time from McNary to John Day, would it be safe to assume that you'll be requesting spill at John Day on Monday night? Actually, I was thinking Sunday the 16th for John Day, Tuesday the 18th for The Dalles and possibly Wednesday, the 19th for Bonneville, Yoshinaka replied. After

further discussion, Yoshinaka changed his request to begin spill at John Day at midnight on Monday, April 17th, and The Dalles at midnight on Tuesday April 18th. In response to a request, Yoshinaka said he will contact BPA and the Corps on Monday to let them know whether or not the salmon managers will be requesting spill at The Dalles on Monday and Bonneville on Tuesday night.

As requested in SOR 2000-9, said Henriksen, we will commence spill at McNary tonight at 6 p.m. up to 120% TDG, which should be about 120 Kcfs. With respect to SOR 2000-10, Henriksen said, we will operate projects as shown in the spreadsheet for flood control; flows in the river will be whatever they are as a result of those operations, plus whatever base flows Mother Nature sends us.

Henriksen noted that the federal action agencies have reached agreement on some changes to the spill program shown in the 1998 Supplemental Biological Opinion (see Agenda Item XIII A, below). Under that agreement, Lower Granite will continue nighttime spill in test mode (20% of total river volume around the clock, plus 4 Kcfs to run the surface collector); Little Goose will provide nighttime spill; Lower Monumental will begin 24-hour spill tonight, at a rate of 50% of total river flow, capped by 120% TDG; Ice Harbor will spill 35 Kcfs during the day, and up to the gas cap at night. The McNary operation has already been addressed, said Henriksen; John Day spill will commence at 6 p.m. on April 16, with zero spill during the day and 60% of river flow at night. Spill at The Dalles will begin April 17 at midnight, at a rate of 40% of total river flow; spill at Bonneville will commence at midnight, April 18, at a rate of 75 Kcfs during daytime hours and up to the 120% TDG cap at night.

Bettin raised the question of what the spill priority list should be in 2000, and what level of spill is appropriate. Do we want to spill up to 120% TDG, starting on those dates, given the fact that chum are still emerging downstream, and are not depth-compensated, as they were during the Spring Creek Hatchery release? he asked. For those reason, I would say spill at Bonneville on Tuesday is conditional on the information obtained by the sampling crews early next week, Wagner replied. After a few minutes of additional discussion, the salmon managers agreed to reconsider the planning date for the commencement of spill at Bonneville from Tuesday to Wednesday of next week.

XIII. Other.

A. Idaho/NMFS/Corp BiOp Spill Negotiations. Wagner said that, as of this morning, the following agreement was reached on BiOp spill operations between NMFS, BPA, the Corps and Reclamation:

- Lower Granite: No change in the base spill operation as defined in the 1998 Supplemental Biological Opinion, except that the 2000 operation has already been modified for the purposes of the prototype surface collector evaluation. That evaluation, which requires a fixed spill level of 20% for 24 hours, will continue as planned in 2000. Beyond the requirements of that evaluation, spill should revert to the base operation.
- Little Goose: No change in the base spill operation as defined in the 1998 Supplemental Biological Opinion (nighttime hours only).
- Lower Monumental: Implement 24-hour spill to the dissolved gas cap (currently 40 Kcfs). This is a new operation that replaces the base operation defined in the 1998 Supplemental Biological Opinion.
- Ice Harbor: No change in the base spill operation as defined in the 1998 Supplemental Biological Opinion.
- McNary: No change in the base spill operation as defined in the 1998 Supplemental Biological Opinion (spring period only).
- John Day: No change in the base spill operation as defined in the 1998 Supplemental Biological Opinion. Continue daytime spill study by varying spill between 0 and 30% in three-day blocks, beginning at 6 p.m. on April 16. Days of 30% spill are to correspond to days of 75 Kcfs day spill at Bonneville Dam. The study should address effects of 0 vs. 30% daytime spill on delay and survival of juvenile migrants and delay of adults. The study operation should continue throughout the spring and summer migration periods of 2000 and 2001; night spill will continue.
- The Dalles: Reduce spill from 64% to 40% for 24 hours each day. This is a new base operation that replaces the base operation in the 1998 Supplemental Biological Opinion. Implement planned project

survival studies in 2000 and 2001; implement the spill operation beginning at midnight on April 17.

- Bonneville: No change in base spill operation as defined in the 1998 Supplemental Biological Opinion. Initiate daytime study with increased spill, varying between 75 Kcfs and the dissolved gas cap (ranges between 120 Kcfs and 150 Kcfs) in three-day blocks. Days of gas cap spill are to correspond to days of 0 daytime spill at John Day Dam. The study should address effects of increased daytime spill on adult fallback and the delay and survival of juvenile migrants. The study operation should continue throughout the spring and summer seasons in 2000 and 2001.
- The passage and survival studies described above at John Day, The Dalles and Bonneville Dams are intended to test potential means of reducing forebay residence time and increasing juvenile fish project survivals in the future (though it is understood that a direct measure of survival differences from changes of this type is unlikely given the practical limits of study design). Further modifications to spill operations suggested by the studies of 2002 and beyond may be limited pending transmission system improvements that are expected to come on line by 2005. In the interim, BPA will seek opportunities to address limiting factors to facilitate further changes in spill operations at the earliest possible date, though these opportunities are likely limited.

These operations will be a part of the 2000 FCRPS Biological Opinion? Jim Nielsen asked. That's correct, Wagner replied. So the salmon managers aren't going to get a crack at this? Steve Pettit asked. At the moment, this is viewed as a done deal, and there is no expectation it will change, Wagner replied. We have been seeking the salmon managers' input over the past several weeks, in a series of meetings with the state and tribal managers, he said; this proposal was shopped around, and no strong opposition was voiced at that time. That is not entirely true, said Nielsen; I attended some of those meetings, and there was no great enthusiasm for this proposal among the state and tribal managers. Still, said Silverberg, it sounds as though anything that was expressed during those meetings was considered, and weighed against the various tradeoffs everyone has to negotiate.

After a few minutes of discussion, there was general agreement that this list of spill operations will be incorporated into the 2000 Water Management Plan.

XIV. Next TMT Meeting Date and Agenda Items.

The next meeting of the Technical Management Team was set for Thursday, April 20, from 9 a.m. to noon at the Customs House. Meeting notes prepared by Jeff Kuechle, BPA contractor.

TMT ATTENDANCE LIST

APRIL 13, 2000

Scott Bettin	BPA	503/230-4573
Scott Boyd	COE	503/808-3943
Ken Dragoon	PacifiCorp	503/262-4951
Kim Fodrea	Reclamation	503/872-2802
Richelle Harding	D. Rohr & Associates	503/771-7754

Cindy Henriksen	COE	503/808-3945
Jim Litchfield	Consultant	503/222-9430
Robyn MacKay	BPA	503/230-3385
Christine Mallette	ODFW	503/872-5252 x 5352
Kevin Nordt	PGE	503/464-7240
Mike O'Bryant	Columbia Basin Bulletin	503/281-9102
Donna Silverberg	Facilitator	503.248-4703
Rudd Turner	COE	503/808-3936
Maria Van Houten	Enron	503/464-7961
Paul Wagner	NMFS	503/231-2316
Marv Yoshinaka	USFWS	360/696-7605
Nancy Yun	COE	503/808-3937

On Phone:

Name	Affiliation	Phone
Margaret Filardo	FPC	503/230-4286
Steve Lingstrom		
Joe Lukas	Grant County PUD	
Jim Nielsen	WDFW	
Steve Pettit	IDFG	208/799-5010
Glen Traeger	Avista Energy	

TECHNICAL MANAGEMENT TEAM

MEETING NOTES

April 20, 2000

**CORPS OF ENGINEERS NORTHWESTERN DIVISION OFFICES – CUSTOM HOUSE
PORTLAND, OREGON**

TMT Internet Homepage: <http://www.npd-wc.usace.army.mil/TMT/welcome.html>

DRAFT

I. Greeting and Introductions

The April 20 Technical Management Team meeting, held at the Custom House in Portland, Oregon, was chaired by Cindy Henriksen of COE 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.

Silverberg welcomed everyone to the meeting, then led a round of introductions and a review of the agenda.

II. Review of Last TMT Minutes.

Silverberg noted that the minutes from last meeting are available via the TMT website; the group spent a few minutes reviewing the notes, after which Silverberg asked that any additional comments be provided to Henriksen by 3 p.m. Friday, April 21.

III. Hanford Reach Update.

Joe Lukas reported that, for the week ending April 16, average flow at Priest Rapids was 147.4 Kcfs; field personnel monitored a total of 64 random sites, and found 110 stranded fish, 27 of which were mortalities. Index site monitoring found 29 juvenile chinook, average fork length 41.2 mm. This week, flows are climbing steadily; daily average flows have been in the 180 Kcfs-200 Kcfs range, Lukas said. We're getting close to achieving a weekly average flow of 170 Kcfs, at which point the 150 Kcfs minimum flow would kick in. Has fish spill begun in the Mid-Columbia? Scott Bettin

asked. Not yet, Lukas replied – Rock Island counts are still very low. Some forced spill is occurring, however.

IV. Scenarios for EPA Temperature Model.

We talked about this last week, said Henriksen; Paul Wagner suggested some scenarios he is interested in seeing modeled, and the Corps will be working on some of those. We hope to have our runs done next week, so in general, this agenda item is in progress, Henriksen said. Weren't you also going to talk to John Yearsley about attending a future TMT meeting? Silverberg asked. I talked to John yesterday, Paul Wagner replied; he's going to be gone for the next two weeks, so he won't be running anything until after May 7. Wagner distributed a handout, "Suggestions to Model the Temperature Effects of Various Flow Scenarios from Dworshak and Brownlee Reservoirs," showing various operations under Scenarios 11, 12, 13, 14 and 15; he asked the TMT to review these scenarios, and to come to the next meeting prepared to provide any further suggestions they may have.

Henriksen noted that the Corps still doesn't have actual Brownlee dissolved gas and temperature data from Idaho Power; she said she had written to IPC about six weeks ago, requesting this data, but it still has not been received. Bettin asked Ningjen Liu about the availability of this information; Liu replied that he is not aware of this request, but that he will check around. So to be clear, the Corps needs whatever dissolved gas and temperature data Idaho Power has available for the Hells Canyon Reach, for as many years as possible. If there is any way for you to provide that to Cindy as soon as possible, that would be very helpful, Silverberg said, adding that Henriksen will fax Liu a copy of her previous letter.

V. Status of Fish Curves.

Mary Yoshinaka said that, at the most recent FPAC meeting, he was told that Paul Wagner would be sending a written request to the Fish Passage Center; he has now done so. Basically, he said, I laid out the views that were expressed at the last TMT meeting, and also included the hand-drawn sample graph which I showed you last time. Any idea when we might see a sample? Silverberg asked. No idea, Wagner replied. Dusica Jevremovich said she has not been involved in this project, but will check with Michelle DeHart on its status.

VI. Status of Lower Columbia Chum Emergence.

Yoshinaka said he had talked to ODFW field personnel; their feeling is that chum emergence is now complete in the mainstem, although there may still be a few chum fry coming out of Hamilton and Hardy Creeks. Fish and Wildlife Service researchers confirm that chum are still coming out of both of those streams, Yoshinaka said; they expect emergence from those two creeks to continue into mid-May. Fall chinook emergence is still continuing, he added.

The other issue we discussed last time was stranding at Pierce Island, said Bettin – Marv was going to check on the possibility of modifying the depression where fish are being stranded so that they can escape back to the river. Yoshinaka replied that he had checked with USFWS, ODFW and WDFW researchers, and was told that, for a variety of reasons, they would not advocate any work on the island:

- excavating a channel to the river could attract more juveniles and increase the number of fish lost to predation
- excavating a channel would allow predatory fish access to the area over a longer period of time
- the site has been stable for a period of time; any disturbance could upset this stability
- Pierce Island is owned by the Nature Conservancy, and any action would require the Conservancy's approval
- Ives Island is in the Columbia Gorge Scenic Area, and work on and access to the island requires approval from the Forest Service
- A Clean Water Act section 404 permit would likely be required from the Corps
- A Hydraulics permit would also be required from WDFW.

The group spent a few minutes discussing an aerial photograph of the island; Bettin observed that, despite the reservations of the field personnel, it would appear that the TMT is being asked to use a very large tool – the entire Columbia River – to solve a very small problem. Bettin noted that the depression in the island in which juvenile fish are becoming entrapped is no larger than his back yard. Certainly we would want to talk to the land owners - the Nature Conservancy – but the area is small enough that I doubt a 404 permit would be required, Bettin said. Perhaps this is

something we can investigate further this summer, he suggested, to see if physical modification of the entrapment might be accomplished prior to the 2001 outmigration. To me, he said, this would be preferable to using the entire FCRPS to solve this problem. Silverberg suggested that the Pierce Island entrapment might be an informative stop on the TMT's field trip itinerary later this summer. In response to a question from Michele DeHart, Bettin said BPA and, in all likelihood, the Corps, would be developing a written proposal on the entrapment modification, and would contact the Nature Conservancy to seek their permission.

Henriksen asked DeHart about the status of the fish curves TMT has asked the Fish Passage Center to develop. DeHart replied that Wagner had provided a memo on this subject to her yesterday; the Fish Passage Center is preparing a written response to that memo. But will you be providing the data we requested? Henriksen asked. The data is already available, DeHart replied – we will not only provide that data, but we will provide an explanation of the data, relative to the three different uses described in the memo.

VII. Review of Current Reservoir Operations.

Henriksen said that, with the installation of the new flow deflectors at John Day Dam, and the resulting change in flow patterns at that project, the navigation companies are experiencing some difficulty in exiting the navigation lock at John Day. This has been a problem since 1997, she said, whenever a certain volume of spill is occurring at that project – 68 Kcfs-108 Kcfs. In previous years, what we've done at John Day is to change the spill pattern slightly for 15-20 minutes whenever a barge is exiting the lock.

The towboat association discussed this issue with FPOM last week, Henriksen said; FPOM agreed that the change in spill pattern should also be implemented this year. She added that Gary Fredricks of NMFS requested information on how many times the change in spill pattern was necessary in 1999; that data is being collected, and will be forwarded to Gary once it is available, Henriksen said. However, I just wanted the TMT to know that FPOM had discussed this safety-related change in the John Day spill pattern, and that no FPOM objections were raised to its implementation in 2000.

Moving on to current operations, Henriksen noted that little has changed since last week's TMT meeting; all storage projects continue to be operated to meet their April 30 flood control elevations – 1239.6 feet for Grand Coulee, 1532 feet for Dworshak, 2056.2 feet for Brownlee, based on the updated water supply forecast.

VIII. New System Operational Requests.

On April 14, the salmon managers submitted SOR 2000-11, supported by ODFW, USFWS, WDFW, NMFS and IDFG. SOR 2000-11 requests the following specific operation for Bonneville Dam, to avoid stranding and entrapment of juvenile salmonids in the Ives/Pierce Islands area:

- Beginning immediately, at flows of 260 Kcfs or less, limit fluctuations in flow to no more than 10 Kcfs in a three-hour period. If flows should exceed 260 Kcfs, then flows should be maintained at this level.

The full text of SOR 2000-11 is available via the TMT's Internet homepage; please refer to this document for justification and other details.

Yoshinaka spent a few minutes going through the contents of this SOR. Bettin said this SOR is definitely something the action agencies cannot do – we're entering the spring runoff period, and control on the fine scale requested in this SOR is almost impossible. Yoshinaka replied that he had talked to the field personnel about that concern, and that their feeling was that flow fluctuations of up to 10 Kcfs per hour might be acceptable. What's the rate of change in the Hanford Reach? Bettin asked. Up to 40 Kcfs, Wagner replied. You're asking us to limit the fluctuations at Bonneville to 10 Kcfs over three hours, yet Priest Rapids flow can vary up to 40 Kcfs in a single hour, Bettin observed – this simply isn't an implementable SOR. The fact of the matter is that Mother Nature will supply a faster recession or increase in flow than what you've specified in this SOR, Henriksen said.

I also have some process questions and concerns, Henriksen said; last week, we talked about the concern about the Pierce Island entrapment, and the fact that an SOR might be forthcoming. At about 3 p.m. on Friday, the day after the TMT meeting, we received this SOR, which was far more restrictive than anything we discussed during the meeting. In addition, she said, you've mentioned that there are more locations that are being considered, and even today, we don't know where those locations are. When we receive these SORs, she said, it would be helpful if we could receive more information, particularly when they request operations that are different than anything we've talked about at TMT. Also, said Henriksen, as we have discussed both in this forum and at the Implementation Team, it isn't reasonable for the salmon managers to expect immediate implementation of an SOR received at 3 p.m.

Perhaps we could add some language to the TMT Guidelines to address situations like this one, Yoshinaka suggested. Actually, I believe that, at the last TMT meeting, Paul Wagner agreed to review the emergency language in the Guidelines with an eye toward how it may need to be modified, Silverberg observed – perhaps we can address this topic later in the agenda, when we discuss the Guidelines. It was so agreed.

It sounds, then, from what I've heard from the action agencies, that the relatively tight rein on operations requested in SOR 2000-11 is not something that can be done at this time of year, due to natural flows in the river, Silverberg continued. How frequently do you expect flows to be below 260 Kcfs? Wagner asked. Not this week, Bettin replied. And not any time in the near future? Wagner asked. It's going to be awhile, Bettin agreed. And the restriction on flow fluctuation requested in this SOR applies only when flows are below 260 Kcfs at Bonneville? Silverberg asked. That's correct, Yoshinaka replied – flows are now about 320 Kcfs. So is it fair to say that, by force of nature, this SOR is being implemented? Silverberg asked. Yes, Bettin replied – the other question, however, is how long the salmon managers want to see it implemented for.

Actually, you're only implementing half of it, said Litchfield – if we hit a cold, dry spell, flows could dry up, at which point the fluctuation restrictions could become more critical. We're still waiting for the justification for the number that was chosen, Bettin said – we don't see the need for that tight of a range. It's based on what I've heard from the researchers, Yoshinaka replied.

Bettin added that there is currently a two-foot operating range in Bonneville pool, to accommodate adult passage research and the test of the surface collector – adhering to these restrictions on flow fluctuation would violate some of your own test protocols. I assume that you still support that research, said Bettin. We do support that research; it comes down to a question of what you protect – research or fish? Yoshinaka replied. It boils down to a question of how critical the research is perceived to be, and how severely it might be affected by this rate-of-change restriction, Wagner said. Could you check into that? Bettin asked. It does sound as though there are a number of questions surrounding this issue, Silverberg observed – perhaps we could ask someone to check into that, and to produce another memo similar to the one Marv provided on the Pierce Island stranding issue. These questions include:

- Where is the stranding occurring?
- How long will stranding remain a concern – when will the fish be developed to a stage when it is no longer an issue?
- What impact could these ramping rates have on the adult and juvenile research occurring at Bonneville? Does the ramping rate take precedence over those two studies?
- What number of fish are we trying to protect? How much take is acceptable?

Chuck Tracy agreed to follow up on these questions, and report back to the TMT at or before next week's meeting. We'll put this on the agenda for further discussion on April 27, Silverberg said.

The group discussed the various factors that make it impossible for the action agencies to control flows in the system, at this time of year, with the degree of precision requested in this SOR; ultimately, in response to a question from Silverberg, Bettin said there may be a window in which the 10 Kcfs over three hour ramp rate might be implemented for a short duration. Yoshinaka observed that it is only at flows immediately below 260 Kcfs that this issue becomes critical – perhaps there is something you could do to slow the ramp rate when you see flows at Bonneville approaching that level. Could you submit an SOR that is more specific as to what you're looking for, then? Bettin asked. Henriksen added that the bigger question is, what is the Ives Island gauge 2 showing during these occurrences – there isn't a

direct, one-to-one correlation with Bonneville tailwater and conditions at Ice Island. In other words, she said, our concern is that Bonneville tailwater conditions aren't a panacea that will give you the conditions you're looking for – it would be helpful if you could be more specific about the real need you would like us to address and deliver, because this is an extremely complex hydrological issue.

Does all of this answer your question, to the extent it can be answered right now? Silverberg asked. It's about as much as I'll get, I guess, Yoshinaka replied. It may not be completely satisfactory, said Silverberg, but it sounds as though, given the complexities of this issue, it's hard for the action agencies to provide a satisfactory answer at this point. Again, said Bettin, the weather is expected to stay warm, so I don't think we'll have to worry about flows falling below 260 Kcfs any time soon.

On April 18, the salmon managers also submitted SOR 2000-12, covering flows in the Mid-Columbia through May 7. SOR 2000-12, supported by ODFW, USFWS, WDFW, NMFS, IDFG and CRITFC, requests the following specific operations:

- Operate the hydrosystem to avoid the 40 Kcfs decrease in flow at Priest Rapids Dam modeled in the April 18 SSARR spreadsheet. The most desirable way to achieve the objective, from a fishery perspective, is to slow the drafting of Grand Coulee and reach the April 30 flood control elevation one week later. This operation would move water from the last week of April into the first week of May, thereby avoiding the 40 Kcfs decrease in flow.

The full text of SOR 2000-12 is available via the TMT's Internet homepage; please refer to this document for justification and other details.

Yoshinaka went briefly through the contents of this SOR; he noted that, in essence, it asks that Grand Coulee reach its end-of-April flood control elevation on May 7, rather than April 30. Henriksen said the Action Agencies understand what this SOR is trying to achieve, and will work together to smooth out the drop in flows with the hydrology as it comes off, and within the project operating criteria.

On April 18, the salmon managers also submitted SOR 2000-13, covering flows at Lower Granite Dam for the week ending May 7. SOR 2000-13, supported by ODFW, USFWS, WDFW, NMFS and IDFG, requests the following specific operations:

- Use water from Dworshak and Brownlee Reservoirs as necessary to augment natural flows to achieve the goal of flows of at least 100 Kcfs at Lower Granite Dam.

The full text of SOR 2000-13 is available via the TMT's Internet homepage; please refer to this document for justification and other details.

Yoshinaka went briefly through the contents of this SOR, noting that the SSARR run shows flows of less than 100 Kcfs at Lower Granite during the week of May 7, a time when, historically, many fish are passing that project. Kyle Martin drew the TMT's attention to the technical discussion paper prepared by Dave Statler of the Nez Perce Tribe, in which Statler lays out the Nez Perce position that Dworshak should be refilled as aggressively as possible early in the season, and that any flow augmentation needed to achieve the Lower Granite target during the early spring should come out of Brownlee Reservoir. Statler spent a few minutes going through the contents of his memo, which is available via the TMT website. Basically, Statler said, the Nez Perce have no problem with trying to maintain 100 Kcfs at Lower Granite, if feasible, but the tribe feels that early and aggressive refill of Dworshak should be a higher priority than flow augmentation from that project, at this point in the season.

Steve Pettit asked whether it matters to the Nez Perce whether Dworshak refill is achieved on June 1 or June 30. Statler replied that, in the tribe's view, project operators should do whatever they can to assure early and complete refill of Dworshak in 2000. Pettit replied that, while Idaho also supports the complete refill of Dworshak by June 30, it also supports the use of Dworshak, as necessary, for early-season flow augmentation, as long as the June 30 refill target is achieved.

Ningjen Liu of Idaho Power raised the concern that opportunities to increase Brownlee outflow are somewhat limited at this time; Hells Canyon is currently spilling to reach Brownlee's end of April flood Control elevation. One generating unit will be down for repair beginning the first two weeks of May, reducing the hydraulic capacity of the Hells Canyon Complex to 26 Kcfs. Given the fact that Brownlee is shown to be releasing 22 Kcfs-23 Kcfs at that time, that means we could release only about 2 Kcfs-3 Kcfs additional without spill, he said.

After a few minutes of discussion, there was general agreement that, Brownlee will be used as the primary source of additional flow augmentation water in the short term, recognizing the powerhouse capacity is limited. There was no desire to request outflow from Brownlee less than what is shown in this week's spreadsheet. Dworshak will be drafted during the first week of May if necessary to maintain flow level. Henriksen reminded the group that 100 Kcfs is the requested flow, but it is a spring seasonal average in 2000 is only 97 Kcfs; she said that, while the projects continue to be operated through May and June to achieve the June 30 refill target, the Corps will make best efforts to meet the 100 Kcfs flow request at Lower Granite now, the flow will be less later in the season. The TMT must recognize the decision to use the water now and shift to refill after May 7.

IX. Recommended Operations.

It was noted that juvenile steelhead and chinook numbers are increasing at the Lower Snake projects, and have held steady or decreased slightly during the past week at the Lower Columbia projects. In addition, it was noted that adult fish are returning at recent-year record levels, including large jack returns in the upriver runs – almost double the 10-year average.

Henriksen said that, during the coming week, all projects will continue to operate toward their April 30 flood control elevations. She said the Corps will, as requested, make best efforts to operate Grand Coulee from day to day to avoid the large drop in outflow shown in the spreadsheet during the week ending May 7; she added that the Corps will attempt to front-load the releases at Dworshak and the Snake River projects in an effort to meet the 100 Kcfs flow target at Lower Granite Dam through the first week of May. It was agreed to revisit this operation at next week's TMT meeting, since the TMT agreed to change priority to refill Dworshak after May 7 rather than using Dworshak for flow augmentation.

X. 2000 Water Management Plan.

Scott Boyd said the version of the TMT's 2000 Water Management Plan now on the website reflects all of the changes agreed to at last week's TMT meeting. He noted that the Montana IRC information will be available soon. It was agreed that a TMT subgroup, consisting of Litchfield, Henriksen and Kim Fodrea, will get together to decide how – and how frequently – this information should be presented. The subgroup will report back to the TMT at the group's May 4 meeting.

The group also devoted considerable discussion to Wagner's list of Columbia River operation objectives, making several minor changes. Wagner said he would incorporate these comments into a new draft of this document, after which these objectives will be considered as accepted by the TMT.

The group then moved on to the TMT Guidelines; most of this discussion focused on what constitutes an emergency, and when the TMT needs to be convened outside of regular meeting hours to consider SORs the fish managers would like to see implemented immediately. Ultimately, no specific resolution was reached on these issues; it was agreed to continue this discussion at next week's meeting.

XI. Other.

Wagner distributed a slightly revised version of modeling scenarios 11, 12, 13, 14 and 15, which John Yearsley will be asked to model when he returns to the office in early May. Wagner asked the TMT to review these scenarios, and provide any comments at the May 4 TMT meeting.

XII. Next TMT Meeting Date and Agenda Items.

The next meeting of the Technical Management Team was set for Thursday, April 27, from 9 a.m. to noon at the Customs House. Meeting notes prepared by Jeff Kuechle, BPA contractor.

TMT ATTENDANCE LIST

APRIL 20, 2000

Scott Bettin	BPA	503/230-4573
Scott Boyd	COE	503/808-3943
Kim Fodrea	Reclamation	503/872-2802
Richelle Harding	D. Rohr & Associates	503/771-7754
Cindy Henriksen	COE	503/808-3945
Jim Litchfield	Consultant	503/222-9430
Kyle Martin	CRITFC	503/731-1314
Patricia McCarty	Facilitator	
Kevin Nordt	PGE	503/464-7240
Mike O'Bryant	Columbia Basin Bulletin	503/281-9102
Donna Silverberg	Facilitator	503.248-4703
Chuck Tracy	ODFW	503/872-5252 x 2428
Paul Wagner	NMFS	503/231-2316
Steve Wallace	PacifiCorp	503/262-4951
Marv Yoshinaka	USFWS	360/696-7605
Nancy Yun	COE	503/808-3937

On Phone:

Name	Affiliation	Phone

Margaret Filardo	FPC	503/230-4286
Jim Hastreiter	FERC	
Dusica Jevremovich	Fish Passage Center	
Steve Lingstrom		
Ningjen Liu	Idaho Power	
Joe Lukas	Grant County PUD	
Steve Pettit	IDFG	208/799-5010
Craig Sprankle	Reclamation	
Dave Statler	Nez Perce Tribe	
Glen Traeger	Avista Energy	
Keith Underwood	Spokane Tribe	

COLUMBIA RIVER REGIONAL FORUM

TECHNICAL MANAGEMENT TEAM

MEETING NOTES

April 27, 2000

**CORPS OF ENGINEERS NORTHWESTERN DIVISION OFFICES – CUSTOM HOUSE
PORTLAND, OREGON**

TMT Internet Homepage: <http://www.npd-wc.usace.army.mil/TMT/welcome.html>

DRAFT

FACILITATOR'S NOTES ON FUTURE ACTIONS

Facilitator: Donna Silverberg

The following is a list of items the Technical Management Team (TMT) discussed at its last meeting that will require future action or discussion.

Minutes & Facilitators Notes:

Comments on the prior meeting minutes are due Friday 4/28 by 5 p.m. Paul Wagner noted changes that need to be made regarding Hanford Reach issues. See minutes for exact changes.

Hanford Reach Update

Joe Lucas reported on last week's activities at the Reach. They are in the midst of the transition from lower to higher flows. Fish spill began at WAN on 4/22 and at Priest on 4/23. Stranding operations are expected to continue until late June. The Hanford Reach Policy Committee meets by phone this Friday at 9 am. Join at 888-476-3752 #600445.

Temperature Modeling

COE reported they are working on the models as discussed last week. Paul Wagner agreed to send Kyle Martin a copy of NMFS' latest model requests. TMT will expect a visit from John Yearsly sometime in May.

Status of Fish Curves

No information was available regarding the status of the fish-o-graph discussed at last weeks meeting. Paul Wagner will follow-up with the Fish Passage Center to bring a graph next week.

Lower Columbia Chum Emergence

USFWS reported that the Chum have emerged and that flows are up enough to help them move out of the area. ODFW brought a map to show TMT where stranding had occurred. At this time there does not appear to be any problem. Last weeks SOR on the issue was successfully completed.

ACTION: Paul Wagner will check on the effect of the ramping rates requested last week on the adult and juvenile research occurring at BON.

Milner Flows

BOR's Pat McGrane joined TMT to discuss immediate and long-term flows at Milner. This year is expected to be dry and, as a result, the BOR is anticipating that irrigators will begin to draw water from the system very soon. Currently water is running at 3500-4000 cfs. With irrigation draws it could drop as low as 200 cfs. If this occurs listed snails will be put in danger. Question: should flows be augmented to hold at 1500 or to gradually ramp down to 200 or not at all? General consensus was that water meant for salmon should not be used for snails. Another option was suggested that might meet the needs of both species. The goal of the suggested operation is to level the flow at Milner for resident species while saving water for shaping at BRN:

ACTION: The salmon managers will meet to discuss the possibility of keeping flows at 1000 cfs at Milner and then holding it at BRN (since Idaho Power company is concerned about BRN refill) for salmon flow augmentation later in the season. BoR will work with Idaho Power to reach an agreement related to the fill and refill issues at BRN. Marv Yoshinaka and Pat will make best efforts to contact all necessary parties before connecting with each other by the end of business on Monday May 1. If irrigators request water prior to Monday, there may be an emergency TMT call over the weekend.

System Requests and Operation

SOR 2000-14—The Corps will make every effort to "round the corner on flood control" in order to smooth the flows for Hanford reach fish. It is anticipated that Grand Coulee's elevation will be 1244 at the end of April and 1240 in the first week of May.

ACTION: To help avoid duplication of efforts in the future, if the salmon managers have a question about spreadsheet data being different from what was discussed at TMT, they are encouraged to call one of the action agencies to reconfirm intentions and or commitments.

SOR 2000-15—Flows of 100 kcfs will be implemented at LGR with priority shifting to refill.

SOR 2000-16 regarding 24-hour spill at Little Goose is a question of policy and should not be decided at TMT. As such, TMT members requested the issue be raised to IT for further discussion about NMFS decision to spill for 12 hours only. TMT members requested that there be technical presentations from: NMFS Science Center outlining the science supporting their decision, the states and tribes regarding the science supporting leaving fish in-river as opposed to transport and BPA on the transmission effects/constraints related to spill at LGS.

ACTION: Donna will call John Palensky about setting up the IT meeting. Cindy will fax the SOR to John with the request for time on the agenda.

4:15 p.m. UPDATE: John Palensky has polled a majority of IT members and the following plan will occur:

On Wed. 5/3 a technical discussion on the above issues will be held at NMFS Fifth Floor Conference room from 9-12 p.m. IT members may join the technical meeting if they choose to do so. IT will hold a conference call from 1-2pm to discuss and make a final determination of the issue. IT's regular meeting has been cancelled.

Next TMT Meeting: 5/4/00 9 a.m.-12:00 p.m.

Agenda items:

- Hungry Horse graphs/charts clarification
- Temperature models
- Update on JDA spill/TDG management

MEETING MINUTES:

I. Greeting and Introductions

The April 27 Technical Management Team meeting, held at the Custom House in Portland, Oregon, was chaired by Cindy Henriksen of COE 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.

Silverberg welcomed everyone to the meeting, then led a round of introductions and a review of the agenda.

2. Review of Minutes from April 20 Meeting.

A few comments were offered on the minutes from the April 20 meeting; Silverberg asked that any additional comments be provided to Henriksen by close of business tomorrow, April 28.

3. Hanford Reach Update.

Joe Lucas characterized the week ending April 23, as a week of transition, from lower to higher flows. The weekly average flow was 193 Kcfs; flows fell as low as 111 Kcfs early in the week and peaked at well over 200 Kcfs later in the week, which produced significant volumes of forced spill at the Mid-Columbia projects. On Saturday, with week-average flows passing 170 Kcfs, we went to the 150 Kcfs minimum, Lucas said. Random monitoring found a total of 6 fish last week, said Lucas; that brings us to 91 total mortalities sampled so far this year, compared to 100 last year at this time -- in other words, we're on roughly the same pace as last year. Index seining found 169 fish, average fork length, again, about 41 mm. Lucas reminded the group that the bi-weekly conference call is scheduled for tomorrow morning at 9 a.m. Fish spill started Saturday, April 22 at Wanapum, and on Sunday, April 23 at Priest Rapids, he added.

Any idea how long the fish protection operation will continue this year? Henriksen asked. Until perhaps the third week in June, Lucas replied.

4. Temperature Modeling Update.

There is some work being done on this front, said Henriksen, but it's not yet complete. We're still talking about whether to use 1995 or 1998 as our average year; both have their good points and their bad points. We hope to have that done next week, Henriksen said. Paul Wagner said he is still open to suggestions regarding the suggested scenarios he distributed last week, since John Yearsley is still out of the office.

5. Status of Fish Curves.

Marv Yoshinaka said that, as was reported at last week's meeting, Paul Wagner had sent in his information to the Fish Passage Center, which said it would be providing a response to the TMT's fish curves request. We have yet to receive that response, however, Yoshinaka said. It was agreed to come back to this item later in today's agenda, when, hopefully, Margaret Filardo or Michelle DeHart will be available to provide a response.

6. Status of Lower Columbia Fish Emergence.

Last week, I reported that chum emergence is basically over, said Yoshinaka; this week, they sampled a few newly-emerged chum below Hamilton Creek and near Beacon Rock. Our thought is that those are fish coming out of Hamilton and Hardy Creek, he said. There still are fairly large numbers of chinook being seen by crews throughout the area, he added, although high water in recent days has limited the ability to sample.

The discussion returned to the Pierce Island entrapment; Yoshinaka referred the TMT's attention to a map of the island, produced by ODFW. The group briefly discussed the bathymetry of the island.

Silverberg noted that, at last week's meeting, a number of questions were raised about the Pierce Island entrapment:

1. Where is the stranding occurring?
2. How long will stranding remain a concern – when will the fish be developed to a stage when it is no longer an issue?
3. What impact could these ramping rates have on the adult and juvenile research occurring at Bonneville? Does the ramping rate take precedence over those two studies?
4. What number of fish are we trying to protect? How much take is acceptable?

With respect to the question of how long stranding is going to continue to be a concern for chum, Yoshinaka reiterated that chum emergence is now largely complete, with the exception of the fish that are still emerging from Hamilton and Hardy Creek. In addition, flows are now well above 260 Kcfs; as long as they continue high, we shouldn't have a problem, said Yoshinaka – chum move out pretty fast once they emerge, although as I said, there are still chinook in the area.

What about the question of whether the requested ramping rate should take precedence over the research at Bonneville? Silverberg asked. I don't know the answer to that, Wagner replied. Also, what about the question of the number of fish we're trying to protect? Silverberg asked. Wagner replied that the chum BiOp identifies no specific number of fish to be protected or taken in a given year. So for the record, is chum emergence officially complete? Henriksen asked. For all intents and purposes, yes, Yoshinaka replied. Since the chum have emerged, is TDG up to 120% near Ives Island an issue? Asked Henriksen. No, said Yoshinaka, TDG up to 120% is not a concern. So does this item need to be on next week's agenda? Silverberg asked. I'll provide an update, Yoshinaka replied.

7. Milner Flows and 427 KAF from the Upper Snake.

Pat McGrane of Reclamation said there are two issues connected with this agenda item: the immediate situation at

Milner, and how water will be delivered from the Upper Snake in 2000. He distributed a handout, showing historic daily flow information at Milner, a teacup diagram showing the current refill status of the Upper Snake reservoirs, and a summary of flow augmentation from Reclamation reservoirs, 1991-1995.

McGrane said current flows at Milner are in the 3.5 Kcfs-4 Kcfs range. However, our water managers are saying that, by May 10, Milner flows could drop as low as 200 cfs as irrigation demand picks up, he said – that could happen very rapidly, over just a couple of days. If you look at this hydrograph at Milner, flows haven't been as low as 200 cfs since 1996. We have four endangered snail species downstream from Milner, and there are other impacts associated with any sudden drop in Milner flow, said McGrane, including water quality and general river health – if we drop suddenly from 1.5 Kcfs to 200 cfs, that's a 2-foot stage drop at Milner. The question, then, is should we augment flow at Milner, to maintain 1.5 Kcfs at Milner after May 10, or should we use that water to gradually ramp flows down to 200 cfs? Is that something the salmon managers want to do? McGrane asked.

Any chance of obtaining additional water for this effort? Wagner asked. No, McGrane replied. What does Reclamation's record of decision say about snails and augmentation water? Jim Nielsen asked. The only rampdown rate I'm aware of is 100 cfs per day, but that applies only to the flow augmentation period later in the summer, McGrane replied – in other words, Reclamation has no legal requirement to ramp flows down gradually at this time of year. The storage space above Milner is owned by the irrigators; Reclamation's storage space isn't full yet, so there is no mechanism for Reclamation to provide flows for snails this time of year. It has to come from some other source, McGrane said; the obvious choice is the storage for flow augmentation.

Steve Pettit said that, as far as IDFG is concerned, the 427 KAF flow augmentation volume should not be used on snails. Doesn't the count start over once the Reclamation volume fills? Robyn MacKay asked. If all of the Upper Snake reservoirs fill at the same time, the debt would be canceled, McGrane replied. I asked our folks in Burley to give me an estimate of the likelihood of that happening in 2000, which, as you're aware, is the lowest water year in the Upper Snake since 1994, said McGrane; they said it's less than a 50-50 chance that even the 10 KAF needed to ramp down gradually would be recovered.

Yoshinaka said that, from the USFWS perspective, he has heard that the likelihood is high that those reservoirs will fill in 2000. Our Boise office would like to maintain 1.5 Kcfs at Milner, or at least use flow augmentation water to ramp flows down gradually, Yoshinaka said. I also brought this issue up at last week's FPAC meeting, he added; their feeling is that they don't want to use this water for snails, but would prefer to retain it for use on anadromous fish.

McGrane said that, over the entire period of record, if you pull out similar years to this one, when snowpack is 83% of normal, the chances of refill go way down – the bottom line is that there is less than a 50-50 chance that this water would be recovered. Given the fact that irrigation demand is going to pick up after the next warm spell, it sounds as though I have my answer, he said – let the flows drop as they will to 200 cfs.

Kyle Martin said CRITFC, for the record, opposes the use of the 427 KAF of flow augmentation water to benefit snails. I've got some very serious doubts, from a hydrological standpoint, that you're going to be able to refill the Upper Snake reservoirs – water supply is going to be a problem in southern Idaho this year. That water is dedicated for salmon, not snails, added Pettit. That was the unanimous response I received from the other salmon managers, pretty much, as well, said Yoshinaka. I suppose the only real possibility is to re-open consultation on snails, he added.

I'm hearing a consensus from the salmon managers that are here not to use that water now, Silverberg said. That's what I'm hearing as well, McGrane said.

MacKay observed that, historically, the TMT has started to release salmon flow augmentation water when irrigation demand causes the flow at Milner to drop below 1.5 Kcfs. Is that what we want to do this year? McGrane said Reclamation's preference would be to limit flows to 1.5 Kcfs at Milner, and get that water out. If we maintain 1.5 Kcfs at Milner, that equates to about 70 days of flow at 3 KAF per day, he said; we would like to get the water out as we've done in the past, spreading that water out over the summer period.

Any idea what the flow will be after flow augmentation is over? Bettin asked. In the last few years, it has stayed at or near 1.5 Kcfs, McGrane replied; however, this is a below-average year, while those were very flush years. It's likely

that the reservoirs will be drafted deeply this year, and that, after the flow augmentation period is over, that flows will drop to minimum flow, 200 cfs at Milner.

Are you thinking, then, that flows may go up there again before they drop back down? MacKay asked. Possibly, McGrane replied – American Falls is now full; Palisades/Jackson are at their flood control elevations. There is a likelihood that we will increase flows out of Palisades/Jackson as those projects fill; however, we will then back-fill American Falls. If all three refill, then the debt will be canceled, McGrane said.

Would it be possible to provide additional shaping in July and August if some of this water is used for snails in the spring? Nielsen asked. I guess I don't understand why, if you release additional water for snails now, Brownlee would be asked to shape deeper later this summer, Ningjen Liu replied. Will Brownlee refill in 2000? Jim Litchfield asked. We're worried about that, Liu replied – the snowpack in the basins above Brownlee is only 62% of average.

It sounds, then, as though we'll start flow augmentation during the first week in June, McGrane said; 70 days later, we'll be into August. Doesn't Brownlee normally shape about 160 KAF earlier in the summer period? Wagner asked. This year could be different, given the water supply situation, Liu replied – the only water I know we'll shape is 40% of the water from the Payette Basin.

We could also decide to split the baby, and go with something a little below 1.5 Kcfs at Milner, Bettin suggested – rather than going down to 200 cfs, we could choose to maintain flows at, say, 400 cfs, or thereabouts. If we did that, it might be possible to hold some of the water in Brownlee, for use later in the summer, he said. McGrane agreed that this might be feasible; 1.5 Kcfs is a maximum flow, not a minimum, and we could do that if that's what the TMT decides to recommend.

So to be sure I understand, said Henriksen, it sounds as though as soon as irrigation demand picks up, probably in the first week in May, flows will sag as low as 200 cfs at Milner, and we will reserve the 427 KAF for use on salmon later in the summer. Also, Reclamation and the Fish and Wildlife Service will be talking about the snail flow issue, Henriksen said. That's correct, McGrane replied. And TMT will talk about the delivery rate for the Upper Snake water? Henriksen asked. That's correct, said McGrane – as I said, 1.5 Kcfs is a maximum flow, so if you want to consider something less than that, we can talk about it.

So conceivably, said Litchfield, if we decided to maintain, say, 1 Kcfs at Milner, rather than 1.5 Kcfs, the water would last through the entire summer. Also, if Brownlee doesn't fill, might they shape that water? he asked. I think you've hit the nail on the head, McGrane replied. Why don't we do that? Litchfield suggested – we could solve the snail problem, and the problem for local residents, at one stroke, without impacting salmon. We can talk about this more next week, said Yoshinaka – I would need to talk to our Boise office, and get back to you.

It was noted that, according to the most recent spreadsheet, Brownlee is expected to refill by mid-June; at that point, they would pass the Milner release downstream, and that's about the time we would want that water released for salmon anyway, Litchfield said. There was general agreement that this might be a workable operation, pending further discussion at TMT.

In response to a comment raised by Cathy Hlebechuk, McGrane clarified that, if flows are maintained above 200 cfs at Milner, all of that flow will be charged to the flow augmentation account; IPC is required to maintain a 200 cfs minimum at Milner, according to the terms of its FERC license, but as long as the flows are above 200 cfs, all of that water would be considered flow augmentation water. Still, said Litchfield, it seems crazy to hammer these animals just so we can charge Idaho Power for 200 cfs.

So if there is a desire to maintain flows at, say, 1 Kcfs, we need to decide that soon, before Milner flows drop to 200 cfs due to increased irrigation demand, Silverberg said. I would recommend that you make that decision as soon as possible, because irrigation demand could increase sooner than May 10, McGrane agreed. Pettit said the people he needs to talk to about this issue within IDFG are unavailable right now, so he can't make a decision today. Silverberg urged the salmon managers to get together as soon as possible to develop a recommendation on this issue.

So what I'll tell the folks at our Burley office is that, until they hear differently, flows at Milner will be allowed to drop

to 200 cfs, McGrane said – if you decide to recommend that flows be maintained at a higher level, please let us know as soon as possible. It would also be helpful if Reclamation could find some additional water outside the Salmon, Nielsen said. Comment noted, McGrane replied. It would also be helpful if Reclamation could discuss the possibility of a shaping agreement with Idaho Power, Wagner said. We can do that, McGrane replied.

Liu said he has some concerns over Litchfield's proposal, in particular, over the idea that Brownlee would be required to shape flows later in the summer. If we put 1 Kcfs into Brownlee, rather than 200 cfs, at this point in the season, it seems to me that Idaho Power should be willing to commit to providing some shaping later in the summer, because we will have helped you achieve your goal of early refill at Brownlee, said Litchfield. I'm not sure about that, Liu replied -- we would need to see the numbers, because we haven't done an operation like this before. It was agreed that Reclamation, the Fish and Wildlife Service, the salmon managers and Idaho Power will try to complete their discussions on this issue by Monday afternoon.

The group discussed the possible need for an emergency TMT conference call, given the fact that Idaho water users have to provide 24 hours notice of their intent to withdraw water. McGrane said he will contact the Fish and Wildlife Service as soon as he hears that increased irrigation demand is in the offing; Yoshinaka and Henriksen will then discuss the need for a TMT conference call at that time.

8. Review of Current Reservoir Operations.

Henriksen said little has changed since last week; the storage projects are continuing to operate toward their April 30 flood control targets. We're rounding the corner at Grand Coulee, and anticipate reaching the flood control target elevation of 1240 feet at that project some time in the first week in May, to provide some additional flow in the Mid- and Lower Columbia, Henriksen said; we're also rounding the corner, in a similar way, at Dworshak. As Ningjen noted, Brownlee is still drafting toward its April 30 flood control point; there will be some hydraulic constraints at that project due to scheduled maintenance during the month of May, she said.

What's the current elevation at Grand Coulee? Litchfield asked. It's at elevation 1246 feet, Henriksen replied – we anticipate getting down to around elevation 1244 feet by April 30, which means we'll have about four feet of storage for release in the first week of May. May 10 is the initial control flow date, so we anticipate that Grand Coulee will begin refilling on May 8 or 9. There shouldn't be much impact on flows in the river, however, because by that time, natural flows are expected to be increasing, Henriksen said.

In response to a question from Henriksen, Wagner said fish counts are booming. Yesterday, they counted 141,000 yearling chinook at Lower Granite, said Yoshinaka; counts have been in the high double digits all week. Counts have been in the 14,000-15,000 range at McNary and John Day, and anywhere from 38,000-90,000 at Bonneville. Steelhead counts have been in the 200,000-300,000 range at Lower Granite. In terms of adult counts, he said, over 102,000 chinook have passed Bonneville, and 1,923 have passed Lower Granite – they're running about 200 per day past that project, currently.

9. New System Operational Requests.

On April 25, the salmon managers submitted SOR 2000-14. Supported by ODFW, USFWS, WDFW, IDFG and CRITFC, SOR 2000-14 requests the following specific operations:

- Reduce the present drafting of Grand Coulee Reservoir to move some of that water to augment flows at Priest Rapids Dam during the first week in May. Based on the data provided by the Corps in the April 25 flow spreadsheet, this objective can be accomplished by drafting the reservoir to an elevation of 1241 feet at the end of April, rather than the 1240-foot elevation modeled in the SSARR. The reservoir will end the month above flood control, but only by one foot. Moving the water from the last week of April to the first week of May is more desirable than the alternatives presented in the flow spreadsheet. Resulting flows at Priest Rapids Dam are predicted to be 195 Kcfs for the week ending April 30 and 170 Kcfs for the week ending May 7, 2000.

Yoshinaka spent a few minutes going through the contents of this SOR, the full text of which is available via the TMT's Internet homepage. The goal is to avoid stranding and entrapment of fish in the Hanford Reach by augmenting flows at Priest Rapids Dam during the peak emergence period, Yoshinaka explained.

So this is the "rounding the corner" concept we've been discussing for the past two weeks? Silverberg asked. That's correct, Henriksen replied. Actually, according to this week's spreadsheet, it looks as though the Corps is already doing better than what you've requested here, Litchfield observed. That's correct, said Yoshinaka; we developed this SOR based on last week's spreadsheet. Is there a reason why you needed to develop what is basically a repeat SOR to the one you submitted last week? Bettin asked. We looked at actual operations, and didn't see the response we discussed at last week's TMT meeting, Nielsen replied.

Perhaps we can consider something a little different, procedurally, said Henriksen – we agreed last week to make best efforts to meet the operations requested in SOR 2000-12, and it probably would have saved some time for all parties if you just would have called me to touch base before developing a new SOR that essentially covers the same ground. In other words, said Henriksen, it would probably be more efficient, in cases where actual operations don't match your expectations, based on the discussion at the weekly TMT meeting, if you were to call me first, before developing a new SOR. I notice NMFS didn't participate in this SOR, Bettin observed. We had faith, Wagner replied.

So in terms of action on this SOR, I would say that, in the future, if the salmon managers have questions about actual operations, you might give Cindy a call before going to the trouble to develop an additional SOR – that would save both you and us time, Silverberg said. In response to a question from Nielsen, Henriksen said that, again, the Corps is attempting to round the corner, to avoid the sharp dropoff in flows shown in last week's spreadsheet. We anticipate that Grand Coulee elevation will be at about 1244 feet by April 30, and we will release the last four feet to get to the flood control elevation during the first week in May. Wagner noted that, if it would be possible to shape some of that flow even later in May, that would be helpful. Henriksen replied that this probably won't be possible; the freshet is expected to begin by about May 10, and at that point, we would be overtaken by events.

The group looked at the current historic and real-time passage index information for Lower Granite Dam for yearling chinook and steelhead, showing the most recent 2000 cumulative index; Wagner noted that, according to the most recent predictions he has seen, about 50% of the steelhead run has now passed Lower Granite Dam. At McNary, however, the yearling chinook run is just getting underway.

Also on April 25, the salmon managers submitted SOR 2000-15. Supported by ODFW, USFWS, WDFW, NMFS and IDFG, SOR 2000-15 requests the following specific operations for the week ending May 7:

- Use water from Dworshak and Brownlee Reservoirs as necessary to augment natural flows to achieve the goal of flows of at least 100 Kcfs at Lower Granite Dam as modeled in the April 24 SSARR.

Yoshinaka went briefly through the contents of this SOR, the full text of which is available via the TMT website. Again, said Bettin, I'm not sure this topic needs a new SOR; we reached agreement on this operation at last week's meeting. Henriksen reminded the group that the actual spring flow objective at Lower Granite is 97 Kcfs; we're willing to meet this higher objective during the early spring period, she said, with the recognition that more flow augmentation now means less water available for flow augmentation later in the season. For the May 1-June 30 period, as shown in the current "Augmentation Volumes at Dworshak" graph, there is 312 KAF in available volume for augmentation from Dworshak, she said.

It could save everyone a lot of effort if you just came to the weekly meeting and told us what flow target you would like to see met, rather than developing a new SOR each week – we understand why you want the flow, and we just need to know what flow you would like to see, Bettin said. Also, said Henriksen, we agreed last week that, in the second week of May, the priority for Dworshak operations will shift from flow augmentation to refill; this SOR doesn't reflect that.

Yoshinaka replied that the salmon managers just wanted to confirm that we are going to see these flows – it wasn't much effort to develop this SOR. However, if there was already agreement on this operation, why was a new SOR necessary? Silverberg asked. Basically, we thought we were supposed to do an SOR each week, Pettit replied. That's helpful, said Silverberg – it sounds like it's just a question of what's necessary, in terms of the weekly TMT process,

rather than a case where the salmon managers were doubting that this operation was actually going to occur.

After a few minutes of discussion, Henriksen said the Corps has no problem with augmenting flows from Dworshak during the first week in May, with the understanding that it cannot guarantee a daily average flow of 100 Kcfs. Also, she said, we have agreed that by mid-May, the priority at Dworshak will shift to refill. If that priority changes, then you would need to submit another SOR, she said. Unless that occurs, however, we can probably just discuss the Lower Granite flow and Dworshak operational situations at the weekly TMT meeting, rather than considering a new SOR each week.

Pettit said he had never agreed to shift to a refill operation for Dworshak during the second week in May; I'm concerned that the shift to a refill operation could cause flows to drop below 100 Kcfs at Lower Granite, and I'm not willing to have that happen just so we can refill Dworshak by mid-June, he said. That's not what the spreadsheet shows, however, Litchfield observed – the spreadsheet shows flows in excess of 100 Kcfs through mid-June, even while refill is occurring.

Robyn MacKay said it is very helpful, to her, to discuss specific flow objectives and other goals at the weekly TMT meeting, because actual operations don't always mirror the operations shown in the spreadsheet. Litchfield said that, given the fact that there is still 312 KAF available for flow augmentation during May and June, over and above the volume needed to refill Dworshak by June 30, this SOR seems workable; there was general agreement that this is the case.

On April 26, the salmon managers submitted SOR 2000-16. Supported by ODFW, USFWS, WDFW, IDFG and CRITFC, SOR 2000-16 requests the following specific operations:

- Implement 24-hour spill to the gas waiver at Little Goose Dam, effective immediately.

Yoshinaka went briefly through the contents of this SOR, the full text of which is available from the TMT website. So this is a request to change the spill operation agreed to in the BiOp NMFS just released two weeks ago? Silverberg asked. Yes – it's a policy issue, Bettin replied. So this issue needs to be elevated to the IT? Silverberg asked. Yes, Bettin replied. The group discussed whether to raise this issue at next week's IT meeting, or to request an immediate IT conference call; ultimately, Yoshinaka suggested that the TMT frame this issue for immediate discussion at an IT conference call.

Bettin observed that the problem with this request is transmission constraints, which will be addressed through transmission system upgrades over the next several years. At this time, however, you're up against a physical constraint, which makes it impossible for us to implement this SOR, he said – for that reason, there isn't much point in convening an immediate IT conference call.

Wagner said he had written a memo on this topic, questioning the benefits of expanding the spread-the-risk strategy further through an expanded spill program at Little Goose; he distributed copies to the other TMT participants. I thought it might be helpful to discuss this for a few minutes today, he said; I have also suggested that it would be helpful for some of the NMFS Science Center researchers to meet with FPAC, to explain the rationale behind NMFS' position. Wagner said it is his hope that this meeting can take place next Thursday at NMFS' Portland headquarters. We would also ask the salmon managers to give us the scientific reasons they feel in-river migration is more beneficial than transport, he said, because, historically, transported fish survive better to adulthood -- there is, in short, a transport benefit.

Wagner went through NMFS' in-river versus transport survival study results; the bottom line is that none of these studies indicate that in-river is the preferred migratory route, he said. If the salmon managers have technical data that contradicts that finding, said Wagner, we would be very interested in seeing that information.

After a few minutes of additional discussion, Silverberg asked whether the proposed meeting between FPAC and the Science Center researchers would be an acceptable next step, rather than calling an emergency IT meeting. Pettit replied that it was his understanding that the salmon managers would like to push for immediate IT resolution of this issue. The group devoted several minutes of discussion to the question of whether or not to raise this issue to IT

immediately, with Christine Mallette and other salmon managers arguing for an emergency conference call, and Bettin, Kim Fodrea and Litchfield wondering what the point of such a step would be, given the fact that it is physically impossible to implement SOR 2000-16 at this time.

Ultimately, it was agreed not to convene an IT conference call; instead, this issue will be discussed in detail at the May 3 IT meeting, including presentations from the NMFS Science Center on the transport vs. in-river survival study results and from BPA on transmission system constraints in the Lower Snake. Henriksen said she will also forward SOR 2000-16 to the IT, formally elevating it for resolution at next week's meeting.

10. Recommended Operations.

Henriksen said that, next week, in response to SOR 2000-14, the Corps will continue to manage Grand Coulee to try to level out the flow at Priest Rapids, with the goal of reaching Grand Coulee's flood control target elevation of 1240 feet some time during the first week in May. With respect to SOR 2000-15, Henriksen said that, again, the Corps will do its best to meet the requested flow level of 100 Kcfs at Lower Granite through the first week of May, using Dworshak as needed to meet that weekly average flow, with the understanding that, in the second week of May, Dworshak will shift to a refill operation. With respect to SOR 2000-16, Henriksen said she will elevate this issue to the IT for resolution at the May 3 meeting.

11. Other.

Rudd Turner noted that spill is occurring in the system at this time; as was the case last year, there is a problem with the spill level at John Day. When we spill 110 Kcfs in a uniform pattern at John Day, we're right at, or slightly over, 120% TDG; according to our waiver, we're supposed to be at or below 120%, he said. We tried dropping spill down to 100 Kcfs, which actually increased TDG, due to changes in the spill pattern, Turner said; what decided to do was partially close Spill Bay 1 last night, and to distribute that spill over the rest of the bays. We actually shut off Spill Bay 1 for part of last night, he said, and the results look encouraging – a decrease of about 1.5%, which got us down to 118%-118.5% TDG. The plan is to continue at this volume, and with the partial closure of Spill Bay 1, to stay within the waiver limit, Turner said, adding that he will provide further updates at upcoming TMT meetings.

Litchfield also raised some questions about the Corps' "Augmentation Volumes at Hungry Horse" spreadsheet; Henriksen said she will attempt to provide an answer at next week's TMT meeting.

12. Next TMT Meeting Date.

The next meeting of the Technical Management Team was set for Thursday, May 4, from 9 a.m. to 1 p.m. at the Corps' Northwest Division Headquarters.

TMT ATTENDANCE LIST

APRIL 20, 2000

Scott Bettin	BPA	503/230-4573
Scott Boyd	COE	503/808-3943
Dick Cassidy	COE	503/808-3938

Ken Dragoon	PaciCorp	503/262-4951
Kim Fodrea	Reclamation	503/872-2802
Russ George	Water Management Consultants Inc.	503/253-1553
Richelle Harding	D. Rohr & Associates	503/771-7754
Cindy Henriksen	COE	503/808-3945
Cathy Hlebelchuk	COE	503/808-3942
Jim Litchfield	Consultant	503/222-9430
Robyn MacKay	BPA	503/230-3385
Christine Mallette	ODFW	503/872-5252 x 5352
Kyle Martin	CRITFC	503/731-1314
Pat McGrane	Reclamation	208/378-5215
Kevin Nordt	PGE	503/464-7240
Donna Silverberg	Facilitator	503.248-4703
Rudd Turner	COE	503/808-3935
Paul Wagner	NMFS	503/231-2316
Marv Yoshinaka	USFWS	360/696-7605
Nancy Yun	COE	503/808-3937

On Phone:

Name	Affiliation	Phone
Jim Heinsenreiter	Enron	
Dusica Jevremovich	Fish Passage Center	
Ningjen Liu	Idaho Power	
Joe Lucas	Grant County PUD	
Rochelle Mills	IPC	
Jim Nielsen	WDFW	

Steve Pettit	IDFG	208/799-5010
Glen Traeger	Avista Energy	
Keith Underwood	Spokane Tribe	

TECHNICAL MANAGEMENT TEAM

MEETING NOTES

May 4, 2000

CORPS OF ENGINEERS NORTHWESTERN DIVISION OFFICES – CUSTOM HOUSE

PORLAND, OREGON

TMT Internet Homepage: <http://www.npd-wc.usace.army.mil/TMT/welcome.html>

DRAFT

FACILITATOR'S NOTES

1. MINUTES. Changes to the minutes from the April 27 meeting were noted by several people, and any additional changes are due by Friday, May 5 at 5PM. See the minutes for exact changes.
2. TEMPERATURE MODELING. The COE presented modeling work and several people expressed that they found the information useful. In response to a question about how FPAC discussions were progressing, Jim Nielsen agreed to report back to TMT after FPAC's May 16 meeting about the status of their discussions of alternative operations at Dworshak. This should be placed on the May 18 TMT meeting agenda, or the next meeting following May 18, if there is no TMT meeting on the 18th.
3. STATUS OF FISH CURVES. No information was available about the status of the fish-o-graph from the Fish Passage Center. Jim Nielsen agreed to report back on the FPC's progress at the next TMT meeting.
4. MILNER FLOWS. Marv Yoshinaka and Kim Fodrea reported back to TMT

about the status of what they learned since last weeks meeting about options regarding Milner flows. The recent discharges at Milner were so low that there is a question about whether it is too late to help resident snails.

ACTION: Marv agreed to check on monitoring information about the snails.

If that information indicates that some action can still be taken, he will let TMT know. If it requires some action before next week's meeting, he will initiate an emergency conference call.

5. ISSUE RAISED TO IT. Several people reported on the conference call of May 4 where IT dealt with the issues arising out of SOR 2000-16 and 24 hour spill at Little Goose. See the notes of that IT meeting for a complete discussion. Paul did report to TMT that in subsequent discussions at NMFS, the date of May 22 appears to be the earliest that TMT members will see the new Biological Opinion and that they should not have great expectations as to the amount of detail in the Biop on this issue. Ed Bowles requested that NMFS provide a written response to the SOR. Paul suggested that he first review the notes of the TMT and IT meetings, and if he needed some additional response, he should address specific questions to Brian Brown.

6. REPORTS ON BIOLOGICAL INFORMATION ABOUT FISH. After a discussion of where to find current information on various web sites, and having Chris Ross summarize the information he regularly puts on the TMT web page, TMT decided that they would like to have this regularly on their agenda, with the understanding that members need to read the information before the meeting as well.

ACTION: Make this a regular part of the meetings as a 10 minute agenda item as part of the review of the previous week. Chris will make a report, and Paul will do so in his absence.

7. SYSTEM REQUESTS AND OPERATIONS.

SOR 2000-17. After extensive discussion, including a revision of the

request from the Salmon Managers, it was agreed that the first priority is the refill of Dworshak, then flow augmentation. The operating agencies will coordinate a reduction of outflow at Dworshak to 10 kcfs to begin no later than Friday night or Saturday morning, toward a weekly average flow of 90 kcfs at Lower Granite Dam, with this operation to continue through May 14. The next priority will be to operate at a weekly average flow at McNary of 260 kcfs. Refill at Grand Coulee is the next priority and Priest Rapids flow is next after that in priority.

SOR 2000-18. After discussion of this SOR and the COE's sensitivity to the Clean Water Act and taking a cautious approach to the 120 TDG waivers, the following operation was agreed to: the spillbay at John Day Dam will be operated at the spill level of two stops; spill will be increased at the lower Snake projects as close as possible to 120 TDG without exceeding the waiver level; the spill priority list shown in the TMT Water Management Plan will be adopted.

8. MAY 18 MEETING. Scott Bettin reported that neither he nor Robin McKay can be at the May 18 TMT meeting. He asked TMT to consider canceling that meeting, if they determine next Thursday that they do not need a meeting on May 18.

9. GOALS AND OBJECTIVES. TMT discussed whether another special meeting is needed to continue this work. Paul suggested that this item be put on next week's agenda and that Donna Silverberg give TMT her advice about possible next steps regarding goals and objectives and whether a special meeting is the best approach.

AGENDA ITEMS NOTED FOR NEXT MEETING:

Whether to have a meeting on May 18

Next steps on goals and objectives

Any action needed regarding Milner flows

I. Greeting and Introductions

The May 4 Technical Management Team meeting, held at the Custom House in Portland, Oregon, was chaired by Cindy Henriksen of COE and facilitated by Jacqueline Abel. 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.

Abel welcomed everyone to the meeting, then led a round of introductions and a review of the agenda.

2. Review of Minutes from April 27 Meeting.

A few comments were offered on the minutes from the April 27 meeting; Abel asked that any additional comments be provided to Henriksen by close of business tomorrow, May 5.

3. Hanford Reach Update.

Joe Lukas of Grant PUD reported that, for the week ending April 30, flows at Priest Rapids averaged 201 Kcfs, which meant that the 150 Kcfs minimum flow was maintained. Field personnel visited 83 random sites last week, sampling 33 stranded fall chinook, 20 of which were mortalities. During the week, index monitoring sampled 570 subyearling chinook, average fork length 43 mm.

In response to a question from Jim Nielsen, Lukas said there was a potential emergency situation on April 27; but flows came back up quickly, and the situation was averted.

4. Temperature Modeling Results.

Rudd Turner said the Corps had done some additional ColTemp runs, covering scenarios 11, 12, 13, 14, 15 and the base case. He went briefly through the parameters modeled in each scenario, then directed the TMT's attention to the graphs showing the results of these model runs for each scenario, expressed in the form of water temperatures through the July 1-September 14 period at Lower Granite and Ice Harbor Dams, as well as the difference in water temperature from the base case for each scenario through the summer season.

When we began this modeling exercise in February, said Turner, we modeled a low-temperature year, a high-temperature year and an average temperature year; now that we're farther into the season, and we have a better idea of what temperature conditions are likely to be in 2000 (close to average), we just modeled the average temperature year, 1990. He asked the other TMT participants to let the Corps know if that's a problem. Henriksen noted that the Corps had chosen to use 1995 as the base case, but added that, in 1995, Dworshak was drafted deeper than the BiOp interim draft limit; in other words, she said, these runs show more Dworshak water than is likely to be available this year.

Turner spent a few minutes going through the results of these model runs; he noted that the timing of the Dworshak releases appears to have the most affect on temperatures later in the season. Scenarios 11, 12 and 15 seem to do the best job of keeping temperatures low early, and maintaining lower temperatures through September.

Henriksen said the Corps has been putting these scenarios together to get a feel for the water temperature trends under various Dworshak operational scenarios, with the goal of helping the TMT to decide how best to use this water to help fish. Have the salmon managers been looking at the possible usefulness of this information to develop a summer operating plan for Dworshak? she asked. Also, now that we're into May, how are your discussions going, and when do

you think you may be able to develop such a summer operations plan?

We have had some discussion of alternative operations at Dworshak, Nielsen replied; CRITFC has sent us a copy of their operating plan, and requested comments by the next FPAC meeting on May 16. We've had some discussions, he said, but we don't have anything concrete yet – I think this information will be very helpful, and I'm hopeful that we can reach some sort of consensus by the end of May.

There is a meeting scheduled with the tribes on June 6, Paul Wagner added, a follow-up to the March 23 meeting. This information could be useful during that meeting as well, because Scenario 14 is their proposed operation – Dworshak remains full until July 31, then starts drafting August 1.

One question on Scenario 15, said Nielsen – was Idaho Power consulted on this? Actually, the base case simply shows what actually happened in 1995, replied Nancy Yun. So we over-drafted Dworshak that year, for the grouting operation, but did we over-draft Brownlee as well? Litchfield asked. No, was the reply.

The group spent a few minutes discussing these results; Henriksen noted that she is still waiting to receive some of the detailed temperature information she has requested from Idaho Power.

I guess what I'm hearing is that people do feel this information is useful, and that FPAC will be discussing it further at its June 16 meeting, said Abel. Can you give us a report back on the outcome of those discussions at the May 18 TMT meeting? she asked. Yes, Nielsen replied. Thanks for doing this, Cindy and Nancy, said Wagner – it's helpful.

5. Status of Fish Curves.

Marv Yoshinaka reminded the TMT that, as has been discussed at previous TMT meetings, the Fish Passage Center has agreed to respond to Paul Wagner's memo on this subject; however, that response has not yet been received. Dusica Jevremovich said she still has not had an opportunity to discuss the fish curves with Margaret Filardo, but will attempt to do so during today's meeting. Nielsen said he had talked to Michele DeHart on Tuesday; she said the Fish Passage Center is working on the curves, but they are not yet ready for distribution. Chris Ross said he had checked the FPC homepage this morning, and some graphs similar to what has been requested are available. He added that there is also some information on the University of Washington's DART homepage, which has at least one estimate of the percentage of the run passed to date.

6. Upper Snake – Milner Flow Update.

Yoshinaka said that, as the TMT discussed last week, flows have now dropped at Milner; he said Pat McGrane had contacted him, as agreed at the last TMT meeting, when irrigation demand picked up and Milner flows started to fall. Yoshinaka said McGrane proposed the use of salmon flow augmentation water early, to protect snails and other wildlife below Milner; after he called me, we had an FPAC call, and the unanimous conclusion was that we did not want to use that salmon water to protect snails, but to pursue other sources of water instead. I agreed to talk to FPAC again, as well as the Fish and Wildlife Service's Boise office, said Yoshinaka; I then talked to McGrane to see what might be possible, in terms of keeping flows up.

We had that conversation on Friday morning, Yoshinaka continued; Pat told us there really wasn't any water available. The other thing that came up was that, this year, the Idaho legislature passed a law that said that, even if water was available, Reclamation would have last call on that water, Yoshinaka added.

Flows at Milner fell to about 300 cfs on Friday; what our office in Boise agreed to do was monitor the reach below Milner to see what is actually happening with snails, Yoshinaka said. I haven't yet heard any results from that monitoring, he added. Kim Fodrea reported that flows last week at Milner had fallen to about 300 cfs, went briefly back up to 1 Kcfs, and are now back down to 200 cfs. I'm not sure whether or not that's good for snails, she said. Probably not, Yoshinaka replied.

The other thing we talked about, with Reclamation, was re-initiating consultation on the snail BiOp, Yoshinaka said. Is there a delisting criteria in that BiOp? Scott Bettin asked. I don't know, Yoshinaka replied.

We also talked about some different possible shaping operations, Fodrea said; Ningjen Liu said he would be on the line today to provide Idaho Power's perspective. Liu said IPC doesn't have a specific option laid out, but generally, in previous years, when Reclamation starts releasing water, Idaho Power has simply passed it downstream. If we can't get it all out during the augmentation period, then we shift that amount, to get it all out, he said.

Fodrea said that, in the past, we haven't started flow augmentation until July, when Brownlee is full, and IPC has just passed the water down. What we're talking about this year is starting to release that water now; such an operation would leave Brownlee less full, which is what IPC wants to avoid. If we give them, say, 100 KAF over the next month, and want it back later in the summer, we would have to ask them to draft deeper later in the summer, she said.

We don't have any water to backfill that space later in the summer, that's the problem, said Liu. Basically, you'll get that water as a pass-through once Brownlee is full, said Robyn MacKay. In other words, said Fodrea, we can have salmon water once Brownlee is full.

Litchfield noted that it should be helpful to IPC to get 1 Kcfs between now and the end of June – what I'm suggesting is that Idaho Power would hang on to it now, then release it later in the summer, once Brownlee hits full. It's a shift from summer flow to spring flow – that's the other thing you need to be aware of, said Henriksen.

I don't think we can ask Idaho Power to shape this volume later, because every day Brownlee is full, it keeps going by, MacKay said. Then the problem is that you don't get the 427 when it's intended, said Nielsen. I think we've already made this decision, because the damage has already been done to the snails, observed Bettin.

So is there some action you want to take, or has the time already passed? Abel asked. I think it's already passed, said Yoshinaka – I'm not sure the snails can cope with the magnitude of the drop in flows that has already occurred. So what does TMT want to do, at this point? Abel asked. Question, said Nielsen – when we were discussing this last week, what I heard was that the water wasn't available. Has that changed now? The explanation I heard was that there was 110 KAF available, and there were paid-for orders for 120 KAF – that's the only pool of water available, said Yoshinaka. I think there may be a small amount of water available now, said Fodrea. Does that change your thinking, about whether the time has passed? Abel asked. I'll check with our Boise office, and report back, Yoshinaka replied. Any additional action you want to take today? Abel asked. Yoshinaka said he will provide a report at next week's TMT meeting; if the situation warrants, he will convene an emergency TMT conference call.

7. IT Recommendations.

Turner reported that, yesterday, there was an IT/TMT technical session to go over the available in-river versus transport survival information; following that was a conference call on the Little Goose spill issue, elevated from last week's TMT meeting. The upshot of that conference call is that 12 hours at Little Goose is what the agreement currently says, and that's what we'll stick with for the time being, Turner said.

NMFS' feeling is that this is actually two policy questions, Turner added: what does the BiOp say on this issue, and how does the region feel about what it says? On the latter question, the resolution wasn't entirely clear; in general, NMFS said the draft BiOp will be coming out later this month, and people will have an opportunity to comment on its Little Goose spill operation at that time. Turner added that, at yesterday's IT conference call, Jim Ruff had indicated that an explanation covering this particular issue may be made available early. The problem is that waiting until May 22 will pretty much make this a moot issue for 2000, said Nielsen; my understanding is that there was a commitment on NMFS' part to try to make that information available sooner than May 22.

In subsequent discussions with Brian Brown, he said no, there is no commitment to deliver anything outside the May 22 schedule, said Wagner. So people will see the draft BiOp on May 22, and will have an opportunity to comment at that time? Abel asked. Yes, Wagner replied. He added that it is unrealistic to expect that this issue will receive extensive deliberation in the new BiOp; you should probably provide any expectations you have to Brian Brown, and we'll try to respond directly, Wagner said. He added that the TMT's role is to implement the BiOp; this issue is clearly outside the BiOp, so it's taking the process somewhere it's not supposed to go.

The group devoted a brief discussion to this point; ultimately, Nielsen observed that the Little Goose spill issue had been referred to the IT after only a brief discussion at last week's TMT meeting, so the process worked the way it was supposed to. We do have some flexibility within the BiOp to talk about issues outside the BiOp operations, said Henriksen; in this case, as Jim says, we elevated it to the IT as soon as it became apparent that the TMT would not reach consensus it was a policy call.

Is 24-hour spill at Lower Granite in the BiOp? Ed Bowles asked. For research purposes, Bettin replied. That's pretty vague, said Bowles – in my opinion, this is the appropriate venue to discuss actions that would, in the salmon managers' view, improve conditions for in-river migrants, and enhance the spread-the-risk strategy. It sounds to me as though NMFS is picking and choosing, he said – IDFG would like NMFS to provide a written justification for its decision. Actually, I believe NMFS has requested a written explanation of the salmon managers' original question, said Nielsen – apparently, they weren't paying attention during the discussion. If the minutes of the technical session aren't adequate, said Wagner, you're certainly within your rights to ask for a written response from NMFS.

We will respond to the BiOp if it places hard constraints on increasing spill at the Lower Snake projects, said Bowles; however, that's a separate issue from this in-season management question. Bettin noted that TMT followed protocol to the letter; if IDFG wants further explanation, they'll need to talk to the IT.

So to wrap this up, said Bowles, the minutes from yesterday's meeting will serve as NMFS' written response to this elevated issue? That's correct, Wagner replied – if that doesn't adequately meet your needs, develop a specific written question and submit it to NMFS, and we will provide a response.

8. Current System Status.

Henriksen said that, in terms of current operations, the storage projects are being operated for flood control and flow augmentation. Through April 30, Dworshak was releasing just over 15 Kcfs, up to the 110% TDG standard. Flows at Lower Granite sagged to 90 Kcfs Monday. Idaho Power was also releasing up to 32 Kcfs from Brownlee. This week, we're continuing to see high outflow from Dworshak; Brownlee is releasing 17 Kcfs, and Lower Granite flows are about 97 Kcfs. The week-average flow at Lower Granite shown in this week's spreadsheet (116 Kcfs) could be optimistic, Henriksen noted; Lower Granite flow was 97 Kcfs yesterday, up from 92 Kcfs on May 1 and May 2.

Henriksen added that Hungry Horse outflow will average near 5.6 Kcfs as shown in the spreadsheet during the week ending May 7 and 1.7 Kcfs for the week ending May 14. The plan is to reduce Dworshak discharge this week? Nielsen asked. I don't know – that something we'll need to talk about later today, Henriksen replied. Grand Coulee has drafted about 1.5 feet since April 30, she added; average flow was 186 Kcfs at Priest Rapids and 306 Kcfs at McNary last week.

In response to a question from Bowles, Henriksen said Dworshak is still releasing maximum outflow, about 14.6 Kcfs, under the 110% TDG standard. The project is refilling slightly, given current inflow. Current Dworshak elevation is 1530 feet, 70 feet down from full. And you're now in refill mode at that project? Bowles asked. Basically, yes, Henriksen replied, but Dworshak is also being used to augment flow at Lower Granite. What about Brownlee? Is that drafting, refilling or passing inflow? Bowles asked. Basically, we're passing inflow, Liu replied. How long will that continue? Bowles asked. We want to reach elevation 2068 by Memorial Day weekend, Liu replied – the project is now at 2056.5 feet.

Fodrea noted that she had promised an update on the status of the Upper Snake storage project at the beginning of each month; in general, she said, the projects are filling, but as Pat McGrane pointed out last week, the odds are only about 50-50 that all of the Upper Snake projects will refill in 2000.

What about the status of the fish? Henriksen asked. Basically, said Chris Ross, we still have lots of steelhead and chinook in the Snake – 255,000 steelhead passed Lower Granite two days ago. We're also seeing good numbers of juvenile migrants at the Lower Columbia projects, Ross said; the only real slow spot has been Rock Island in the Mid-Columbia, and over the past few days, we're seeing fish numbers taking off there as well. We're also seeing listed Redfish Lake sockeye at the Lower Snake projects, including some fish that apparently held over from last year, he added; in general, said Ross, I would say that we're right in the middle of the run.

Any estimate of the percentage of the run that's passed Lower Granite? Turner asked. My best guess is that we're right in the middle of the run for yearling chinook, and perhaps slightly past the middle of the run for steelhead, Ross replied. He added that adult counts at Bonneville remain high; as many as 9,000 adult chinook have passed that project in a single day. The pre-season prediction was 135,000 returning adults; that has now been updated to 165,000 fish, the highest run we've seen in over a decade, Ross added.

Do we want weekly fish status and reservoir status reports now that we're into the season? Henriksen asked. Ross observed that his weekly update on the TMT website is available, and contains links to the FPC and DART homepages. Do we need a verbal update at the weekly meetings? Abel asked. Maybe not every week, but as events like the end of chum emergence occur, then we need to know about it, said Bettin. Peak passage periods are important as well, Turner observed. Usually, we know a meeting or two in advance when a major point is coming up, said Bettin.

After a few minutes of further discussion, it was agreed that brief weekly updates on fish migration and reservoir status would be useful during the TMT's in-season meetings; it was also agreed, however, that the TMT members will take responsibility for reviewing the information on the web pages in advance of each week's meeting, and will come to each week's meeting prepared to discuss any questions they may have. Henriksen asked that the other TMT members email her any sites which need to be bookmarked for review during the weekly TMT meetings. Ross agreed to provide the weekly migration status update; in his absence, Wagner will provide the report.

In response to a question from Abel, Jevremovich said she is still trying to get in touch with Margaret Filardo in her office, but does not yet have a status update on the availability of the fish curves. Henriksen observed that, since Fish Passage Center agreed to begin furnishing this information as early as April 16, but have not yet done so, it might be more expeditious to ask another of the other salmon managers to take this task on. Nielsen replied that his preference would be to let the Fish Passage Center continue to develop this tool; he said he will get an answer on when it will be available prior to next week's TMT meeting. I would like to get this resolved, while we still have fish in the river on which to match flows, said Henriksen. We'll put this on the agenda for next week, said Abel.

9. New System Operational Requests.

On May 2, the salmon managers submitted SOR 2000-17, supported by ODFW, USFWS, WDFW, NMFS, IDFG and CRITFC. SOR 2000-17 requests the following specific operations:

- Use water from Brownlee and Dworshak Reservoirs as needed to augment natural flows to achieve the goal of daily average flows of at least 100 Kcfs at Lower Granite Dam as modeled in the May 1 SSARR. A higher priority should be placed on using water from Brownlee Reservoir than Dworshak Reservoir.
- Use water from Grand Coulee Reservoir as necessary to augment natural flows to achieve the goal of daily average flows of at least 170 Kcfs at Priest Rapids Dam as modeled in the May 1 SSARR.
- Use water from Grand Coulee, Dworshak and Brownlee reservoirs as necessary to augment natural flows to achieve the goal of average daily flows of at least 260 Kcfs at McNary Dam as modeled in the May 1 SSARR.

Jim Nielsen spent a few minutes going through the contents of this SOR, the full text of which is available on the TMT website. He noted that the goal of this SOR is to ensure good passage conditions during the peak of the yearling chinook and steelhead runs.

On the Lower Granite portion of this SOR, Henriksen noted that 100 Kcfs is in excess of the spring seasonal flow objective, which is 97 Kcfs. In addition, she said, it requests day-average flows, and we manage the system to a weekly average. Also, Henriksen continued, at the last two TMT meetings, we have agreed to operate Dworshak to maintain flows in the Lower Snake during the first week in May, then shift to a refill mode at that project. If you look at the April final forecast, Henriksen said, if we stop flow augmentation at Dworshak now, we would have about 244 KAF of Dworshak storage to use during May and June for flow augmentation, and still refill by June 30.

Henriksen added that the most recent estimates of the water supply at Dworshak have gone down; if we continue to

release Dworshak water up to the gas cap through May 14, as this SOR requests, we would have less than a 50% chance of refilling Dworshak this year. In other words, she said, that would be a shift in our agreed-upon priorities for the use of that project.

You're saying there would be less than a 50% chance of Dworshak refill in 2000? Nielsen asked. Less than a 50% chance of refill by June 30, Henriksen replied. The forecast on Monday showed flows of up to 125 Kcfs at Lower Granite today; however, actual flows are much lower, which points out, once again, that these are only forecasts, she said. Is there some interim level of Dworshak outflow that would allow us to keep augmenting to a certain extent, and still achieve refill at Dworshak by June 30? Turner asked. Perhaps, Henriksen said – that's math, but what I'm talking about here is the larger question of the objective. The objective is to keep flows up to about 100 Kcfs at Lower Granite during the peak of the juvenile outmigration, said Nielsen; Steve Pettit concurred that this should be the goal.

Bettin observed that we are right at the transition point when the salmon managers will have to decide whether keeping flows up now is worth risking the possibility that Dworshak will not refill. Henriksen agreed, adding that the forecasts have consistently shown that it will be possible to maintain a seasonal average of 95 Kcfs-97 Kcfs during the spring period; the longer you ask us to keep flows up around 100 Kcfs, the more you're cutting into the water that will be available to augment flows and control temperatures later in the summer season. We understand, said Nielsen.

Kyle Martin said CRITFC and the Nez Perce Tribe would prefer that a higher priority be placed on Dworshak refill, although they also want to maintain flows as high as possible during the spring period. Would you change your support for this SOR, given the fact that the new forecast shows a lower water supply for Dworshak? Bettin asked. Probably, Martin replied.

After a brief caucus break to discuss this new information, Nielsen said the salmon managers had agreed that, in response to the concerns about the remaining volume at Dworshak for flow augmentation while still achieving refill by June 30, the salmon managers are recommending a lower flow target at Lower Granite – 90 Kcfs – through May 14. We also request that this target be met by maintaining a maximum discharge at Dworshak of 10 Kcfs, with a rampdown rate of no more than 2.5 Kcfs/day, Nielsen said; again, this applies through May 14 only.

So refill is still the first priority at Dworshak? Litchfield asked. Yes, Nielsen replied. In response to a question from Bettin, Martin said the goal of the rampdown restriction is to avoid a sudden sharp drop in Clearwater River flows. Henriksen noted that, if natural flows in the Clearwater increase, it might be possible to avoid a sharp drop in overall flow while reducing Dworshak outflow more quickly than 2.5 Kcfs per day. That's why we're asking for a goal or reference point, Bettin said. Just so that you're aware, said Pettit, tomorrow the chinook salmon fishery begins below Dworshak Dam; there will be 100 boats lined up gunwale to gunwale at the mouth of the North Fork Clearwater. You might bear that in mind as you discuss the rampdown rate, he said.

After a brief additional discussion, MacKay said the operating agencies will pick a flow designed to maintain a weekly average flow of 90 Kcfs at Lower Granite, and stick to that. Do you know how long the chinook season will continue, and number of days per week? Turner asked. Every day through August 4, Pettit replied.

Henriksen noted that the Corps is still waiting for the freshet to begin; for that reason, she said, the ramping rate issue could be overtaken by natural events. That's fine, said Martin – basically, all we're trying to do is use the Dworshak storage as wisely as possible into the future – I'm not that hung up on the ramp rate, as long as we don't see a steep drop in flows in the Clearwater.

When will this operation start? Ross asked. For this week, we have agreed to continue to augment from Dworshak to maintain as close to 100 Kcfs at Lower Granite as we can, said Henriksen. In response to a question, Henriksen said it would be fine with the Corps if Dworshak rampdown begins sooner; after a few minutes of discussion, it was agreed that the Corps will cease spill at Dworshak, and reduce outflow at that project to powerhouse capacity (10 Kcfs) as soon as possible – probably within the next day or so. We'll work with the Corps to develop a start time that works from both a scheduling and a recreational standpoint, said MacKay. It could happen tonight; late Friday night May 5 or early Saturday morning May 6 at the latest, said Henriksen. Martin said the tribes would prefer that Dworshak outflow be reduced as soon as possible.

Do any of the other TMT members have a problem with this recommendation? Abel said. I'm also hearing that Dworshak refill is the first priority, said Henriksen; if natural flows rise, we may reduce Dworshak outflow to minimum, to store as much water as possible, while maintaining the 90 Kcfs flow target at Lower Granite on a weekly average. So it's fair to say that refill is the highest priority, in terms of Dworshak operations, and that flow augmentation is now the secondary priority at that project? Abel asked. Yes, was the reply.

Given the fact that this operation will start no later than late tomorrow night, said Henriksen, it should be noted that we probably will not achieve a weekly average flow of 100 Kcfs this week at Lower Granite Dam.

With respect to the next section of this SOR, Bettin said the action agencies can begin reducing Grand Coulee outflow to meet the 260 Kcfs flow target at McNary; however, one of these three parameters – Priest Rapids flow, Grand Coulee elevation or McNary flow – will have to float. Nielsen said the salmon managers' preference would be to ensure that the McNary and Priest Rapids flow targets are met, so that the water is put on the fish when the fish are present.

Litchfield observed that, based on the numbers shown in this week's spreadsheet, it doesn't appear feasible to achieve a week-average flow of 170 Kcfs at Priest Rapids during the week ending May 14. If we try to maintain 170 Kcfs during that week, it sounds as though we'll be jeopardizing the refill target at Grand Coulee as well, said Litchfield. After a few minutes of additional discussion, Nielsen said he would put the McNary flow target at the top of the list, followed by Grand Coulee refill, followed by the Priest Rapids flow target. Given the 90 Kcfs flow target at Lower Granite, he said, we would need about 170 Kcfs at Priest Rapids to achieve 260 Kcfs at McNary, he said. Given the fact that the calculated seasonal flow at McNary is 255 Kcfs, said Fodrea, would you consider something less than 260 Kcfs at McNary? Not next week, Nielsen replied.

So what I'm hearing is that 90 Kcfs at Lower Granite is the top priority for this period; the second priority is maintaining 260 Kcfs at McNary, and the third priority is refill at Grand Coulee, said Abel. There was general agreement that this is an accurate representation of the TMT's current priorities. Yoshinaka added that emergence is nearly over in the Mid-Columbia; peak numbers of newly-emerged fish are now present in the system, and should be moving out soon.

Does that approach work for everyone? Abel asked. No disagreements or objections were voiced in response to Abel's question.

On May 2, the salmon managers also submitted SOR 2000-18, supported by ODFW, USFWS, WDFW, NMFS, IDFG and CRITFC. SOR 2000-18 requests the following specific operations:

- Increase spill to the gas waiver at all mainstem projects. In particular, it has been noted that spill has been reduced significantly below the gas waiver at Little Goose Dam. Present dissolved gas levels are significantly below the gas limits in the tailrace and at the next downstream project (Lower Monumental forebay). In addition, it has been shown that total dissolved gas levels at the John Day Dam tailrace monitor are affected by the operation of Spill Bay 1, which is not equipped with a spill deflector. Presently, the Corps is experimenting with operating Spill Bay 1 in a partially-closed mode. This has resulted in lower tailrace gas levels. It is likely that not operating this spill bay would further reduce gas levels and allow spilling of a greater volume of water. Therefore, it is recommended that Spill Bay 1 not be operated (except when necessary to pass high flow) and that increased spill be provided at John Day Dam to the gas cap.

Nielsen went briefly through the contents of this SOR, the full text of which is available via the TMT's website. The goal of this SOR is to spill the maximum volume possible at each project, without exceeding the TDG waiver limits, he said.

Subsequent to the preparation of this SOR, he said, I understand that there have been some discussions within NMFS and the Corps about the fact that totally stopping spill at John Day Spill Bay 1 could result in undesirable conditions for juvenile migrants passing the project, Nielsen said. That's correct, Wagner replied – two stops is as low as NMFS wants to go. If you completely shut that spill bay, predation danger along the shoreline increases significantly.

Turner said the situation has been settling out, in terms of predictable gas levels in the Bonneville forebay and at the

Camas/Washougal monitoring station. Apparently some higher gassed water from spill the previous week and weekend were moving through the system. Regardless of cause, the Corps needs to respond when gas levels exceed the standard or waiver levels. We have been cautious about increasing spill volumes at John Day, given the readings we've been seeing at downriver sites, he said. The reading at Camas/Washougal has now dropped from 118%+ to about 115%, so spill has been increased at John Day from 120 Kcfs to 135 Kcfs, and may increase to 140 Kcfs tonight. Spill at The Dalles may be increased from 100 to 120 Kcfs as well. Overall, in terms of the underlying issue of spill management, the Corps is particularly sensitive to Clean Water Act issues this year – we're taking a cautious approach to the waivers, Turner said. In order to avoid exceeding waiver limits, we're selecting certain levels of spill, then increasing upward as needed. Henriksen emphasized that this is not a change in Corps spill management policy, we have worked in previous years as well to avoid exceeding standards or waivers.

In response to a question from Nielsen, Turner said spill at Little Goose was at 30 Kcfs over the weekend; it was increased to 33 Kcfs on Monday, then to 40 Kcfs two nights ago. It now looks as though we could increase spill at Little Goose further, he said; it could be at 45 Kcfs by tonight. We're concerned about cycling in the TDG levels recorded downstream of that project, particularly in Lower Monumental forebay, Turner said.

In regards to the specific language in the SOR, given the present variation in river conditions, it just isn't feasible to spill right at the gas cap, Turner continued – 120/115% is the target on the lower Snake and Columbia projects, and we'll try to get as close as we can, but we aren't going to exceed the 120/115% TDG level. In other words, said Henriksen, managing spill is more of an art than a science, at this point in the season – the reality is that it isn't physically possible to manage all of the projects in the system right up to 120% TDG, 24 hours a day, seven days a week. There are many variables that effect the TDG readings throughout the system, so the Corps monitors and responds to the readings every day, Henriksen said.

Regarding operation of spill bay 1 at John Day, additional discussions have occurred among technical folks and NMFS feels that spill bay 1 should remain at the 2 stop limit rather than closing it completely as requested in the SOR, said Wagner. It sounds, then, as though the operation of John Day is consistent with NMFS' reconsideration of this issue, said Nielsen. If there are other issues associated with the spill pattern issue, I would suggest that you submit them to FPOM prior to their meeting next week, Turner said.

Wagner brought up a minor issue connected with the current spill priority list; McNary, John Day and Bonneville is the current priority, Turner replied – we haven't updated that for a couple of weeks. We have not yet added the Mid-Columbia projects to the spill priority list, he said.

What action needs to come out of this SOR? Abel said – anything, given what you've heard today? Spill Bay 1 at John Day will be at two stops, said Wagner; also, that spill has been or will be increased at the Lower Snake projects to yield TDG levels as close to 120% as possible. Also, he said, the spill priority list will be adjusted to be consistent with the spring/summer priority shown in the 2000 Water Management Plan.

10. Recommended Operations.

Recommended operations were covered during the previous agenda items.

11. Other.

A. Further Discussion of TMT Goals and Objectives. Is a separate meeting needed to finish off the goals and objectives appendix? Abel said. Given the fact that you're into the in-season period, that might be the best way to deal with this. Actually, before we decide that, said Bettin, neither Robyn MacKay nor I will be able to meet on May 18 – would it be possible to cancel that meeting? After a brief discussion, it was suggested that the TMT meet on May 17, rather than May 18.

With respect to the goals and objectives discussion, Wagner observed that Donna Silverberg had said she would be reconsidering how best to bring this issue to resolution; he said he is reluctant to schedule a separate meeting before Silverberg has an opportunity to share her thoughts. It was agreed to discuss the goals and objectives issue with Silverberg on May 11. It was further agreed that, at its May 11 meeting, the TMT will decide whether to cancel its May

18 meeting, or to reschedule it for May 17. MacKay suggested that any SORs submitted on May 11 think a little further ahead, through the end of May, given the fact that the TMT may not meet on May 18.

12. Next TMT Meeting Date.

The next meeting of the Technical Management Team was set for Thursday, May 11 from 9 a.m. to noon at the Corps' Northwestern Division Headquarters. Meeting notes prepared by Jeff Kuechle, BPA contractor.

TMT ATTENDANCE LIST

MAY 4, 2000

Jacqueline Abel	Facilitator	503/282-5920
Scott Bettin	BPA	503/230-4573
Scott Boyd	COE	503/808-3943
Dick Cassidy	COE	503/808-3938
Ken Dragoon	PacifiCorp	503/262-4951
Kim Fodrea	Reclamation	503/872-2802
Richelle Harding	D. Rohr & Associates	503/771-7754
Cindy Henriksen	COE	503/808-3945
Cathy Hlebechuk	COE	503/808-3942
Jim Litchfield	Consultant	503/222-9430
Robyn MacKay	BPA	503/230-3385
Christine Mallette	ODFW	503/872-5252 x 5352
Kyle Martin	CRITFC	503/731-1314
Jim Nielsen	WDFW	360/902-2812
Chris Ross	NMFS	503/230-5416
Rudd Turner	COE	503/808-3935

Paul Wagner	NMFS	503/231-2316
Marv Yoshinaka	USFWS	360/696-7605
Nancy Yun	COE	503/808-3937

On Phone:

Name	Affiliation	Phone
Ed Bowles	IDFG	
Jim Heinsenreiter	Enron	
Dusica Jevremovich	Fish Passage Center	
Ningjen Liu	Idaho Power	
Joe Lukas	Grant County PUD	
Jim Nielsen	WDFW	
Steve Pettit	IDFG	208/799-5010
Glen Traeger	Avista Energy	
Eva Williams	El Paso Merchant Energy	

TMT Conference Call 5-8-00 Minutes

Attendance

Cindy Henriksen – COE

Rudd Turner – COE

Scott Boyd – COE

Dick Cassidy – COE

Cathy Hlebechuk – COE

Julie Ammann - COE

Kurt Robinson – COE

On Phone

Jim Nielsen – WDFW

Marv Yoshinaka – USFWS

Christine Mallette – ODFW

Robyn MacKay – BPA

Paul Wagner – NMFS

Jim Litchfield – Consultant representing Montana

Ed Bowles – IDFG (joined call in progress)

The Corps of Engineers set up the conference call because of its concern with flow levels at Lower Granite Dam.

Cindy Henriksen opened the call by explaining the reason for the call. The inflows to Lower Granite have declined since the last TMT meeting (May 4). The inflows have been 96.8, 99.8, 96.3 and 88.5 kcfs, Thursday May 4th to Sunday May 8th respectively. The inflows have been going down due to colder than normal weather that has been experienced the last several days. A new water supply forecast, the May final, issued by the National Weather Service, has reduced the forecasted inflow to Dworshak Dam from what the April final had. In April the forecasted inflow to Dworshak was 99% of normal, now it is forecasted to be 95% of normal. The Corps of Engineers forecast has gone down similarly from 103.6 % to 98.7% of normal. The reduced forecast has reduced the amount of water that is available for flow augmentation without jeopardizing the 50% chance of refilling Dworshak by June 30th. According to the Corps calculations there is only enough water to keep augmenting flow for about two days at the current outflow rate of 10.7 kcfs.

Even with continuing to augment at the outflow rate of 10.7 kcfs, it is estimated that inflow to Lower Granite is estimated to be 83 kcfs on Friday May 12th. The question was asked regarding the level of the outflow from Brownlee Reservoir? It is expected to average 17.5 kcfs this week.

It was pointed out by Marv Yoshinaka that a large number of juvenile fish were passing Lower Granite at the current time. Over the past several days the counts have been in the 300,000 – 500,000 range. So many juvenile fish are currently passing Lower Granite that Lower Granite has gone to bypass mode, putting some collected fish back in the river because there is no room for them in the fish facilities.

Cindy Henriksen said that the issue that needed to be decided today was, is the operational priority refill of Dworshak Reservoir or to continue augmenting flows into Lower Granite and take the chance of not refilling Dworshak by June 30th. Cindy Henriksen pointed out that by the Corps calculations on Monday morning there was about 21 kcfs – days left of augmentation water left in Dworshak Reservoir that could be used before refilling by June 30th would be severely jeopardized. Jim Nielsen said that he was reluctant to stop flow augmentation because of the large numbers of juvenile fish in the river and he was hoping for warmer weather which would increase natural flows. Paul Wagner said that he was concerned that if we were still trying to refill Dworshak on the Fourth of July weekend that flows at Lower Granite would be very low because of the reduced power generation from Brownlee during the weekend. It would be better if Dworshak was passing inflow during that time. Jim Litchfield stated that he wanted to make sure that the full amount of Dworshak water was available for temperature control and flow augmentation for the summer and fall fish passage season.

There was some discussion about the expected flows at Lower Granite around the fourth of July weekend. The TMT spread sheet had the flows in the low 40s. Cindy Henriksen said that she felt that the flow estimate was on the low side and she expected that the flows may be around 60 to

70 kcfs based on historical data. Ed Bowles joined the call at this time.

Jim Nielsen said that he did not want to jeopardize the 50% chance of refilling Dworshak. There was then some discussion on possible flow scenarios that could be used with the remaining flow augmentation water. Ed Bowles suggested the option of continued augmentation at Lower Granite and accepting reducing the probability of refilling Dworshak and/or refilling it at a later date. After some discussion no one felt comfortable with doing either of these options.

The question was then raised would it be possible to get more water out of Brownlee during this time period? Robyn MacKay stated that she thought that there was an agreement in place with Idaho Power Company (the operators of Brownlee) that allowed BPA to have Brownlee release some amount of water from May 1st to May 15th which BPA would have till June 30th to make up.

Rudd Turner said we know that a large proportion of the high numbers of juvenile fish now passing Lower Granite were hatchery fish. He wanted to know what portion of the listed juvenile fish had passed Lower Granite. Paul Wagner said that NMFS estimate was that 80% (+/- 20%) of the steelhead ESU had passed and around 44% – 48% of the chinook ESU had passed.

No one supported reducing the probability of refilling Dworshak by June 30th. It was decided to spread the available augmentation water from Dworshak over the rest of the week until Monday morning May 15th. The ramp down of flow would begin this Monday evening, May 8th, to avoid causing problems for the people fishing downstream of Dworshak. Jim Litchfield asked if it would be better just to stop augmenting now in order to increase the odds of refilling Dworshak since the planned flow augmentation would only increase flow at Lower Granite by one or two kcfs. It was decided, however that all available augmentation water should be used. In addition Robyn MacKay was going to find out more details about the agreement with Idaho Power and work to see if that could be put in place to get more outflow from Brownlee. NMFS was also going to help in this. Ed Bowles was going to call the Governor's office to see if he could get the Governor's support for additional flows out of Brownlee.

This issue will also be discussed at the next FPAC meeting and at Thursday's TMT Meeting.

Scott Boyd

TECHNICAL MANAGEMENT TEAM

BOR: *Kim Fodrea\Pat McGrane*

NMFS: *Paul Wagner\Chris Ross* BPA: *Scott Bettin\Robyn MacKay*

USFWS: *Marv Yoshinaka\Bob Hallock\Susan Martin*

OR: *Christine Mallette \Chuck Tracy* WA: *Jim Nielsen* ID: *Ed Bowles\Steve Pettit*

MT: *Jim Litchfield* COE: *Cindy Henriksen\Rudd Turner*

COLUMBIA RIVER REGIONAL FORUM

TECHNICAL MANAGEMENT TEAM

RE: May 11, 2000 Meeting

TMT Conference Call 5-8-00 Minutes

The Corps of Engineers set up the conference call because of its concern with flow levels at Lower Granite Dam.

Cindy Henriksen opened the call by explaining the reason for the call. The inflows to Lower Granite have declined since the last TMT meeting (May 4). The inflows have been 96.8, 99.8, 96.3 and 88.5 kcfs, Thursday May 4th to Sunday May 8th respectively. The inflows have been going down due to colder than normal weather that has been experienced the last several days. A new water supply forecast, the May final, issued by the National Weather Service, has reduced the forecasted inflow to Dworshak Dam from what the April final had. In April the forecasted inflow to Dworshak was 99% of normal, now it is forecasted to be 95% of normal. The Corps of Engineers forecast has gone down similarly from 103.6 % to 98.7% of normal. The reduced forecast has reduced the amount of water that is available for flow augmentation without jeopardizing the 50% chance of refilling Dworshak by June 30th. According to the Corps calculations there is only enough water to keep augmenting flow for about two days at the current outflow rate of 10.7 kcfs.

Even with continuing to augment at the outflow rate of 10.7 kcfs, it is estimated that inflow to Lower Granite is estimated to be 83 kcfs on Friday May 12th. The question was asked regarding the level of the outflow from Brownlee Reservoir? It is expected to average 17.5 kcfs this week.

It was pointed out by Marv Yoshinaka that a large number of juvenile fish were passing Lower Granite at the current time. Over the past several days the counts have been in the 300,000 – 500,000 range. So many juvenile fish are currently passing Lower Granite that Lower Granite has gone to bypass mode, putting some collected fish back in the river because there is no room for them in the fish facilities.

Cindy Henriksen said that the issue that needed to be decided today was, is the operational priority refill of Dworshak Reservoir or to continue augmenting flows into Lower Granite and take the chance of not refilling Dworshak by June 30th. Cindy Henriksen pointed out that by the Corps calculations on Monday morning there was about 21 kcfs – days left of augmentation water left in Dworshak Reservoir that could be used before refilling by June 30th would be severely jeopardized. Jim Nielsen said that he was reluctant to stop flow augmentation because of the large numbers of juvenile fish in the river and he was hoping for warmer weather which would increase natural flows. Paul Wagner said that he was concerned that if we were still trying to refill Dworshak on the Fourth of July weekend that flows at Lower Granite would be very low because of the reduced power generation from Brownlee during the weekend. It would be better if Dworshak was passing inflow during that time. Jim Litchfield stated that he wanted to make sure that the full amount of Dworshak water was available for temperature control and flow augmentation for the summer and fall fish passage season.

There was some discussion about the expected flows at Lower Granite around the fourth of July weekend. The TMT spread sheet had the flows in the low 40s. Cindy Henriksen said that she felt that the flow estimate was on the low side and she expected that the flows may be around 60 to 70 kcfs based on historical data. Ed Bowles joined the call at this time.

Jim Nielsen said that he did not want to jeopardize the 50% chance of refilling Dworshak. There was then some discussion on possible flow scenarios that could be used with the remaining flow augmentation water. Ed Bowles suggested the option of continued augmentation at

Lower Granite and accepting reducing the probability of refilling Dworshak and/or refilling it at a later date. After some discussion no one felt comfortable with doing either of these options.

The question was then raised would it be possible to get more water out of Brownlee during this time period? Robyn MacKay stated that she thought that there was an agreement in place with Idaho Power Company (the operators of Brownlee) that allowed BPA to have Brownlee release some amount of water from May 1st to May 15th which BPA would have till June 30th to make up.

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No one supported reducing the probability of refilling Dworshak by June 30th. It was decided to spread the available augmentation water from Dworshak over the rest of the week until Monday morning May 15th. The ramp down of flow would begin this Monday evening, May 8th, to avoid causing problems for the people fishing downstream of Dworshak. Jim Litchfield asked if it would be better just to stop augmenting now in order to increase the odds of refilling Dworshak since the planned flow augmentation would only increase flow at Lower Granite by one or two kcfs. It was decided, however that all available augmentation water should be used. In addition Robyn MacKay was going to find out more details about the agreement with Idaho Power and work to see if that could be put in place to get more outflow from Brownlee. NMFS was also going to help in this. Ed Bowles was going to call the Governor's office to see if he could get the Governor's support for additional flows out of Brownlee.

This issue will also be discussed at the next FPAC meeting and at Thursday's TMT Meeting.

Meeting notes prepared by Jeff Kuechle, BPA contractor.

Attendance

Cindy Henriksen – COE

Rudd Turner – COE

Scott Boyd – COE

Dick Cassidy – COE

Cathy Hlebechuk – COE

Julie Ammann - COE

Kurt Robinson – COE

On Phone

Jim Nielsen – WDFW

Marv Yoshinaka – USFWS

Christine Mallette – ODFW

Robyn MacKay – BPA

Paul Wagner – NMFS

Jim Litchfield – Consultant representing Montana

Ed Bowles – IDFG (joined call in progress)

TECHNICAL MANAGEMENT TEAM

MEETING NOTES

May 11, 2000

CORPS OF ENGINEERS NORTHWESTERN DIVISION OFFICES – CUSTOM HOUSE

PORLTAND, OREGON

DRAFT

I. Greeting and Introductions

The May 11 Technical Management Team meeting, held at the Custom House in Portland, Oregon, was chaired by Cindy Henriksen of COE 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.

Abel welcomed everyone to the meeting, then led a round of introductions and a review of the agenda.

2. Review of Minutes from May 4 Meeting.

No changes were made to the minutes from last meeting; Silverberg asked that any additional changes be provided to Henriksen by close of business Friday, May 12.

Henriksen noted that the minutes from the May 8 TMT conference call are also available; she explained that the Corps had called the meeting because of concerns about Dworshak operations in the face of a sharply-declining Dworshak water supply forecast. In other words, said Henriksen, we felt a conference call was needed to discuss operational priorities at the project, given the fact that the remaining inflow to Dworshak is not as large as we thought it was going to be and flow at Lower Granite was well below expectations. The Corps was concerned because the TMT had agreed to begin refilling Dworshak beginning May 8, which would further reduce the flow at Lower Granite.

Henriksen said that, during the call, it was agreed to begin Dworshak refill by reducing project outflow to minimum (1.3 Kcfs) on May 15; however, she said, the chances are still only 50-50 that Dworshak will refill. Following the May 8 discussion, the Corps reduced Dworshak outflow to 3.4 Kcfs; that operation is scheduled to continue through late Sunday night, when Dworshak will go to minimum outflow.

Robyn MacKay said that, also at the conference call, she agreed to check with Idaho Power about implementing the "Idaho Power Agreement" re the 110 KAF of Upper Snake storage water. MacKay said Brownlee is releasing 25 Kcfs now; outflow will be reduced to 10 Kcfs on May 16. Ningjen Liu said that, actually, the minimum outflow from Brownlee will be 11 Kcfs, and Brownlee discharge will be reduced to that volume on May 15. Anyway, said MacKay, the requested operation is underway.

Meeting notes for the May 8 conference call are available on the TMT home page.

3. Hanford Reach Update.

Joe Lukas reported that, for the week ending May 7, average flows at Priest Rapids were 189 Kcfs, with a range from the low 150s up to 210 Kcfs. The project continues to operate to meet the 150 Kcfs minimum. Crews visited 48 random sampling sites last week, and found 388 stranded chinook, 122 of which were mortalities. Index seining found 691 juvenile chinook, average fork length 43.3 mm.

Lukas added that, based on the forecasts he has seen, it is likely that, next week, flows will drop below the 170 Kcfs weekly average required to maintain the 150 Kcfs minimum; at that point, operations at Priest Rapids will revert to the +/- 20 Kcfs flow band. In response to a question from Paul Wagner, Lukas explained that the reason mortalities were so high was that one of the random sites hit an entrapment – a depression.

With respect to the total number of fish observed at the random sites through the week, said Jim Nielsen, Paul Wagner of WDFW reported that the remaining 266 sampled fish died within 24 hours as a result of the draining of the entrapment area. Lukas said that, typically, the remaining fish would have been seined from the entrapment and returned to the river. He added that the bi-weekly Hanford Reach policy call is scheduled for tomorrow morning; he and Nielsen said they will clarify whether those fish were returned to the river, or whether all 388 were mortalities. In response to another question from Marv Yoshinaka, Lukas said he was not aware of any call for emergency rewetting last week; if that occurred, said Lukas, it is a mystery to me.

4. Status of Fish Curves.

Nielsen said there is significant progress to report on this front this week; FPAC received a five-page single-spaced memo, as well as some sample graphs, from the Fish Passage Center at their meeting this week. The plan is to make a presentation on this information at the next TMT meeting; he said.

5. Status of Milner Flows.

Kim Fodrea reported that Milner flows are starting to rebound, because cold temperatures in Idaho have caused irrigators to reduce their withdrawals. She said she expects Milner flows to be in excess of 1 Kcfs by later today. Pat McGrane added that Milner flows should be in the 1.5 Kcfs-2 Kcfs range until the next warm spell – perhaps for the next week or so. Yoshinaka said he has been trying to connect with the Fish and Wildlife Service's Boise staff to check on the status of monitoring below Milner, but has been unsuccessful so far. McGrane said he had talked to USFWS yesterday, in the context of the discussion of the snail BiOp, but they didn't get into much detail about the monitoring. We'll hope to hear from Marv about that at the next TMT meeting, said Silverberg.

What about the status of the three Upper Snake reservoirs? Yoshinaka asked – are all three going to fill this year? Glad you brought that up, said Fodrea – that's a touchy question, because of the strong influence of irrigation. If you would have asked me last week, Fodrea said, I would have told you the chances of all three refilling were not good. This week, however, the weather has cooled, which is good, from a refill standpoint – the chances are now 50-50 again. So it's a definite maybe? said Yoshinaka. Essentially, yes, Fodrea replied. McGrane said it now appears likely that Palisades and Jackson will fill; however, by that time, American Falls will be drafting, which is why we can't say with any confidence that all three projects will fill – it all depends on how much the irrigators are withdrawing. If we get another week of cold, wet weather, the situation will improve, said McGrane.

In response to a question from Nielsen, Henriksen said the current prediction from the National Weather Service is that we might achieve normal temperatures after about eight days – in other words, it looks like the current weather pattern could hold for at least the next week.

6. Review of Current System Operations.

Henriksen reported that, for the week ending May 7, Dworshak was releasing the maximum volume allowable up to the 110% TDG level. Flows at Lower Granite were just under 95 Kcfs on a weekly average. Grand Coulee continued to release for flood control; flows at Priest Rapids averaged 183.5 Kcfs; flows at McNary, 282.6 Kcfs.

Henriksen said the most recent water supply forecast at Lower Granite has decreased slightly, from 19.2 MAF down to 19 MAF. The spring season flow target at Lower Granite is now 96.2 Kcfs, as a result, Henriksen said. Did the Corps' Dworshak forecast change? Chris Ross asked. Yes – it also went down, from 103% of normal down to 98.7% of normal, said Scott Boyd.

Ross then reported on the status of the fish migration, noting that, as requested, he had sent the Corps a list of the

Internet fish passage sites the TMT will need to access during its weekly meetings. The group spent a few minutes going through the current passage data; Ross said that, at Lower Granite, the cumulative passage index for yearling chinook now shows that, based on the FPC's estimates, the 2000 run is now past the halfway point. He added that this is a combined hatchery/wild index. Any idea how much of the total run has passed? Henriksen asked. This assumes certain survivals of hatchery fish to Lower Granite, Ross replied; it is adjusted so that the 100% passage point moves to the left. This particular graph is just an estimate, in other words; we could have more fish arriving at Lower Granite than we have in the past, in which case the run will continue for longer than might be expected if you look at this graph.

The group then looked at the daily index information; what this shows is that, for yearling chinook at Lower Granite, we've been seeing numbers in excess of 100,000 for the past four days, with a peak in excess of 240,000 on May 5, said Ross. Numbers are increasing at Little Goose, McNary and John Day as well. In short, said Ross, we're seeing lots of fish at all monitoring sites.

The other thing to bear in mind is that the reduction in flow in the Snake has probably slowed the migration, said Nielsen – these numbers may well have been higher, without that drop in flow. Ross added that daily steelhead passage indices at Lower Granite peaked at over 500,000 fish over the weekend; daily steelhead numbers have since declined to the 200,000 range. Yoshinaka added that Dworshak Hatchery released steelhead last week, which may help to explain the magnitude of the steelhead numbers seen last week at Lower Granite.

Ross noted that the wild/hatchery cumulative passage index is very high, and outside the historic numbers for this date. Nielsen added that there is less spill this year than there has been in past years; this change in facility operations could be affecting these passage numbers as well. So that means that, in a bountiful water year like 1997, there may not have been as high a percentage of the total run collected, thereby skewing the index low? Henriksen asked. Could be, Nielsen agreed. That could also work both ways, given the fact that there was no spill program before 1995, Rudd Turner noted.

Moving on to passage data at Rock Island Dam, Ross noted that the combined hatchery/wild chinook index shows a later migration than we've seen in the past; numbers are below the historic average 95% confidence interval line. However, passage numbers have steadily increased at that project since May 1, he said. With respect to steelhead, said Ross, this is somewhat similar to the chinook information – lower numbers, a later start, then increasing numbers about May 1. These fish are now in the river and being detected at McNary and at the other Lower Columbia projects, he added.

The group devoted a few minutes of discussion to the reasons for this pattern in the passage indices at Rock Island; it was noted that, because there are no extended-length screens at that project, passage at that project is strictly volitional.

In response to a question from Silverberg, Nielsen said these juvenile passage numbers are basically average for the past several years. Are you excited about the adult counts in 2000? Silverberg asked. Yes, Nielsen replied.

Moving on to the combined yearling chinook index at McNary, Ross said the index has been a little bit slow and late this year, but is now on the increase. Nielsen noted that part of the reason for that may be changes in the operation at Ringold Hatchery. Fish were released earlier this year from the hatchery. Has the ten year average index been adjusted to reflect the smaller number of fish expected to pass this year because of the change in hatchery practice, asked Henriksen? No it has not, replied Filardo.

With respect to McNary steelhead indices, Ross said this information shows an earlier and larger migration, compared to the historic average. We're now right about where the historic average has been for this date, he said. Turner observed that the high numbers of steelhead seen earlier this week at Lower Granite have yet to arrive at McNary, so the numbers at McNary should be increasing again.

Nielsen added that, on May 8, FPAC updated its estimate of the 2000 adult spring chinook run from 165,000 to 190,000. Less than half of those fish have passed The Dalles at this point, he said, adding that this is the first commercial spring chinook fishery the tribes have had since the mid-1970s.

The group then moved on to the current DART information from the University of Washington; with respect to wild

PIT-tagged ESU yearling chinook, at Lower Granite, the cumulative passage estimate is that 59% of the run is completed (+/- 23% error bound). Ross noted that this information is just an estimate; it is a tool, but it isn't a definitive answer. With respect to the wild steelhead migration, the DART estimate is that 92% of the run has now passed Lower Granite Dam (+/- 23% C.I.).

7. New System Operational Requests.

On May 9, the salmon managers submitted SOR 2000-20. This SOR, supported by ODFW, USFWS, WDFW, IDFG and CRITFC, requests the following specific operations:

1. Provide 110 KAF planned for the spring migration flow augmentation from the Hells Canyon Complex
2. Increase outflow from the Hells Canyon Complex up to 25 Kcfs beginning immediately.

Nielsen went briefly through the contents of this SOR; the full text of which is available from the TMT web page. He noted that this SOR was submitted at the request of Idaho Power, which wanted an SOR to cover the operation agreed to earlier this week; it was precipitated by the declining runoff forecast for the Dworshak basin. The goal of this SOR is to help offset the decline in Lower Snake flows due to the reduction in Dworshak outflow, he said.

Once again, said Nielsen, we're in a situation where we've drafted for flood control, then the runoff is delayed, and the fish suffer. Anyway, said Nielsen, this SOR basically reflects the current operation. Wagner noted that NMFS supports this operation as well. So noted, for the record, said Silverberg.

When we talked on Monday, the hope was that next week would be better, weather-wise, and the Snake runoff would come unstuck, said MacKay. We don't really see that happening, which means we could see a huge drop in Snake River flows next week – do you want to let that happen, or do we want to try to smooth that out?

Wagner said that, according to the agreement, Idaho Power had two caveats: they needed to achieve certain mid-spring elevations at Brownlee, and they needed to maintain 11 Kcfs for fall chinook incubation flows. Fall chinook emergence is now over; it was agreed that Idaho Power could conceivably reduce Brownlee outflow to 10 Kcfs. However, the Nez Perce have a pump intake at Pittsburgh Landing; they want Idaho Power to maintain at least 11 Kcfs, so that the pump doesn't run dry, cutting off water to 500,000 fish in their acclimation facility, Wagner said.

How does that impact this SOR? Silverberg asked. Basically, if we go to 10 Kcfs outflow at Brownlee, that's going to cause problems, said Nielsen, which will impact the ability to get all 110 KAF out. Actually, by not releasing all 110 KAF this week, we would move that water to next week or the week after, said MacKay – in other words, we would simply shape the 110 Kcfs a little differently, which may not be a bad thing, given the 15 Kcfs drop in Snake River flows we expect to see next week.

In reply to a question, Ningjen Liu said it is still Idaho Power's intent to refill Brownlee Reservoir to elevation 2068 by Memorial Day weekend, for recreational reasons. We knew this was a risk, said MacKay; that risk was that temperatures would not increase soon enough for our purposes, and we would see a drop in Snake River flows.

We're not happy about being forced into a choice between a failure to refill, and a failure to provide flows for spring fish, said Nielsen – this situation was caused by flood control drafts based on inaccurate forecast information, and we're not very happy about that. The agreement with Idaho Power will only delay the problem, and may make it worse over the long haul, he said.

Henriksen took strong exception to the idea that this situation was caused by a mishandling of the flood control operation – flood control is a fact of life, she said, and in 2000, we did everything we could to round the corner and move water from the flood control releases into the migration period. We acknowledge that, said Nielsen. Also, with respect to the forecasts, they have been pretty consistent through the season, said Henriksen; we've known for quite some time that meeting the spring objective at Lower Granite was going to be a challenge. We've also known for two weeks that once Dworshak reverted to a refill operation, flows were going to fall in the Snake; however, this situation is the fault of Mother Nature, not the Corps.

Nielsen again expressed dissatisfaction with the current flood control operation; he said that, in his view, those operations need to be revisited prior to next season. I am not saying the operating agencies mishandled the flood control operation, he said; the fault is with the current flood control operation itself – this year's situation points out the need for change.

That's clear, said Silverberg – is there a way to say that, somewhere, and move on? Obviously you're dissatisfied with the current flood control regime, as well as the Biological Opinion's ability to deal with questions about the flood control operation. Can we say this somewhere, to the people who are going to change the flood control regime, or shape the Biological Opinion, rather than here?

What we're faced with is trying to do the best we can under archaic flood control guidelines, said Dave Statler – that's what needs to be addressed. That is going to be addressed under the new BiOp, but that doesn't do us much good in 2000, said Nielsen.

Yoshinaka agreed that the TMT does seem to keep coming back to this issue; it probably does need to be addressed at another level, he said. My perspective, as Regional Forum facilitator, is that it is being addressed within many forums, said Silverberg – it's on the radar screen, in other words. Is there a reason we need to keep raising it here, where it always raises tension levels? It's primarily for documentation purposes, said Kyle Martin.

Jim Litchfield noted that the TMT had developed a letter last winter, addressing VARQ and flood control; that letter was never sent, because the action agencies didn't feel that they could sign a letter, at that time, requesting changes to the flood control operation. If the point is documentation, he said, we should probably reference that as well. You'll recall that the Corps also provided a presentation on the status of the flood control and VARQ operations, said Henriksen – we have tried to be responsive to these concerns.

After a brief caucus, Nielsen said the salmon managers had a question: what would flows be absent any agreement out of Hells Canyon? In other words, what are we getting through this action? We still have to return what we've already scheduled, MacKay replied, but I would expect Hells Canyon outflows to be in the 16 Kcfs-17 Kcfs range.

In recognition of the situation we're in, said Nielsen, the salmon managers would like to amend the SOR to release 80 KAF between now and May 15, and spread the remaining 30 KAF over the following seven days. We have heard, I believe, that Hells Canyon flows will not fall below 11 Kcfs, he added. I believe that's correct, MacKay replied. Can we still get the 30 KAF out over the following week? Nielsen asked. Whatever you take through the 15th, you have to return through the end of the month, MacKay replied – to take a step back, you have the month of May, during which Idaho Power was going to release about 16 Kcfs out of Brownlee. There is a limit – you can take a maximum of 110 KAF, and it has to be out by May 15. However much you put into the May 1-15 period, that's how much you have to put back in by May 31. The 30 KAF will not have to be returned, in other words, MacKay said.

Liu said it was his understanding that the full 110 KAF was supposed to be delivered by May 15. Also, he said, in the absence of fish operations, IPC was planning to release 16 Kcfs; the actual amount delivered for fish this week may already be 80-100 KAF. I was just using the 16 Kcfs as a round number, for talking purposes, MacKay said. What about the concern about not going below 11 Kcfs? Silverberg asked. We're aware of the tribes' concern, and have already committed to them that we will not go below 11 Kcfs from Hells Canyon, Liu replied.

Liu and Dave Statler discussed whether that additional 1 Kcfs, which would lower the river's elevation by 2-3", is really necessary, given the fact that 11 Kcfs provides approximately eight inches of coverage over the pump intake; ultimately, Statler said the tribes are concerned about the risks associated with flows below 11 Kcfs, given the fact that there are half a million subyearlings at stake. And this activity will be over by the end of the month? Liu asked. That's correct – the fish will be released by May 31, Statler replied.

I'm not hearing a huge disagreement here, said Silverberg; perhaps we can move on. Do you know what the accounting is to date, as far as how much of the 110 KAF has already been delivered? MacKay asked. I do not, Liu replied. MacKay said the operation started yesterday, and is scheduled through Saturday; tomorrow, we will be making a decision about what operation to request for Sunday and Monday. Do you think 80 KAF has already been released?

Nielsen asked. I doubt it, MacKay replied.

After a few minutes of additional discussion, MacKay observed that the TMT isn't talking about drafting an additional 30 KAF next week – they're talking about not releasing 30 of the 110 KAF, so that the 30 KAF does not have to be returned later in the month. Ultimately, MacKay summarized the operation by saying that BPA will look and see what the remaining volume is on Saturday, and will release the remaining volume on Sunday – we will stop at 80 KAF. In other words, she said, we will not schedule more than 80 KAF to be released by May 15. In addition, Idaho Power will maintain a minimum outflow of 11 Kcfs from Brownlee.

So to reduce this problem to flow terminology, we'll have 25 Kcfs out of Brownlee until we hit the 80 KAF point, then flows in the Snake will drop by approximately 14 Kcfs, said Yoshinaka. That's correct, MacKay replied. She noted that Brownlee is trying to achieve elevation 2069 feet by May 26; in doing that, across the month of May, they were guessing that they would need to release a flat 16 Kcfs. The contract allows us to shape up to 110 KAF into the first two weeks of May; what this has done is increase Brownlee outflow to 25 Kcfs. After the agreement expires, however, we would need to reduce Brownlee outflow by an equivalent amount, in order to allow Idaho Power to store an equivalent volume to the one they shaped. To the extent that we take less than 110 KAF before May 15, that volume does not have to be repaid later in the month, which will keep Brownlee outflow a little higher during the last two weeks in May.

Maybe we need to revisit the 80 KAF versus 110 KAF issue, said Wagner. Given the fact that IPC has committed to maintain 11 Kcfs out of Brownlee through the end of May, he said, I would suggest that we release the full 110 KAF by May 15. In other words, said Nielsen, we're back to Plan A – take the full 110 KAF, plus the 11 Kcfs minimum.

Liu replied that Idaho Power is willing to commit to the full 110 KAF only if it does not jeopardize refill – the 11 Kcfs minimum is Idaho Power's number one priority, followed by achieving elevation 2069 by May 26, followed by the delivery of the 110 KAF. Sounds like Idaho Power needs to do the math, said Silverberg. In that case, said Litchfield, let's simply say release as much of the 110 KAF as possible, once Idaho Power goes over the accounting information. Once that accounting is available, Liu said he will provide it to MacKay, who will share it with the rest of the TMT. If further conversation is needed at that point, there will be a TMT conference call; otherwise, Idaho Power will release as much of the 110 KAF as possible, without jeopardizing refill.

Also on May 9, the Columbia River Inter-Tribal Fish Commission submitted SOR 00-C1. This SOR, covering Dworshak refill, requests the following specific operations:

- Reduce flow at Dworshak to minimum flow, 1.3 Kcfs, immediately, to ensure refill by June 30, 2000.

Kyle Martin went briefly through the contents of this SOR, the full text of which is available from the TMT web page. He noted that this SOR is based on the most recent water supply forecast information, which, as Cindy said earlier, is down from the last forecast. Henriksen noted that the agreement was that Dworshak outflow would go to minimum on Monday, May 15. Martin said reducing Dworshak outflow immediately would increase Dworshak elevation by approximately half a foot.

Nielsen said that, although this is a small volume of water, given the flow situation at Lower Granite, and the upcoming reduction in Brownlee outflow, the other salmon managers would prefer that Dworshak continue to release 3.4 Kcfs through May 15. Statler said the Nez Perce support the CRITFC SOR, and would prefer to reduce Dworshak outflow to minimum as soon as possible, to save the maximum amount of water for summer flow augmentation. Silverberg reminded the TMT that they had agreed that the first priority for the use of Dworshak water, at this point in the season, is refill; Nielsen agreed, but said this issue is essentially one of interpretation. Martin once again assailed the Corps' "excessive" flood control drafts at Dworshak.

Statler reminded the group that the Nez Perce had submitted a Dworshak operations plan, which was ignored; we have already shifted more water into the spring migration period than the Nez Perce are comfortable with, he said, and we're going to miss that cool water later this summer.

After a brief caucus, Nielsen said the salmon managers who supported SOR 2000-20, while reluctant to reduce flows further at Lower Granite, are willing to support the tribal SOR, and now recommend that Dworshak go to minimum outflow, effective at 10 p.m. tonight. Thank you, said Martin.

On May 10, the salmon managers submitted SOR 2000-19. This SOR, supported by ODFW, USFWS, WDFW, IDFG and CRITFC, requests the following specific operations:

- Meet the target flow at McNary Dam of 260 Kcfs.

Nielsen spent a few minutes going through the contents of this SOR, the full text of which is also available via the TMT web page. He noted that the salmon managers are not interested in additional impacts to the possibility of refill at Grand Coulee in order to meet the seasonal flow target; some of the specific measures mentioned in the SOR include the investigation of the availability of additional water from the Canadian storage projects and from Non-Treaty Storage.

Given the fact that migration numbers are now at their peak, he said, we are concerned about the upcoming reductions in flow modeled in the current spreadsheet, and would ask that the action agencies do everything they can to maintain 260 Kcfs at McNary, short of additional drafts from Grand Coulee. He noted that it now appears unlikely that the spring seasonal flow target will be met at McNary; this situation has been caused by the implementation of the flood control operation, combined with the current cool weather conditions and declining natural flows throughout the system. This being the case, the salmon managers are requesting that the action agencies consider additions to the operations beyond those originally anticipated in the Biological Opinion.

Kim Fodrea noted that, in May, Reclamation wants Grand Coulee to be in refill mode, for a variety of reasons. If we use Grand Coulee to provide 260 Kcfs at McNary over the next two weeks, the project will be at about elevation 1240 feet; to refill from there, we would need to reduce flows in the Lower Columbia to about 200 Kcfs through the month of June.

Again, said Nielsen, we are not requesting any additional drafts from Grand Coulee – since this situation is the result of the federal parties' actions, and because the BiOp doesn't adequately address these kinds of situations, we're asking you, what are you going to do?

I can address the Canadian piece, said MacKay – we do have the ability to move some additional water past Arrow at this point in the season. However, because of trout spawning, if we increase Arrow outflow now by, say, 10 Kcfs, we have to maintain that flow level through the end of June, which will impact the amount of storage water available during the summer period. She noted that Arrow has been releasing 20 Kcfs since April. We cannot impact Canadian refill, she said, so it's pay me now, pay me later – the spreadsheet flows for July and August will go down proportionately, in other words, based on what you decide to do now.

After a few minutes of discussion, Silverberg noted that the SOR requests that the federal parties provide written documentation of their immediate strategy; Nielsen said there are two basic questions, the first of which is, what can be done now? The salmon managers are not prepared to agree to the immediate strategies discussed today, given their ramifications later in the summer season, he said; I don't know whether or not that makes this a policy issue. Basically, we either have to draft Grand Coulee, or not meet the 260 Kcfs flow target; we would like to know what the federal parties are going to do to attempt to meet the flow target at McNary, without impacting Grand Coulee refill. We can explore the possibility of moving some additional water into the spring period, said Wagner; he noted that the BiOp flow targets are essentially soft constraints – "flow objectives," rather than "flow targets." The TMT's mission is to shape available water within the season; we have some to work with this year, and we'll see what we can do to shape the available water within the season.

After a few minutes of additional discussion, Silverberg observed that this is probably all the TMT can do with this issue today. Nielsen noted that the salmon managers would be interested in discussing, at some future time, what can be done to alleviate this seemingly-annual issue in future years.

So when you talk about opportunities to shift some of the summer water to the spring period, said Henriksen, are you referring to not refilling Grand Coulee? I was referring to the potential to increase Arrow outflow now, given the fact that the spreadsheet shows Lower Columbia flows in excess of 250 Kcfs in early July, Wagner replied. Nielsen said the salmon managers are less interested in measures that will reduce the available summer flow augmentation volumes. Ross said he would like to have some additional discussion of the operations modeled in the spreadsheet, such as the flows shown at Priest Rapids during late June and the first few weeks in July.

Steve Clark and Nielsen debated who should be responsible for developing alternative operations to make additional spring flow augmentation water available; Nielsen said the salmon managers are tired of being forced into this situation every year, because of the flood control operation, while Clark said he is frustrated because flow augmentation and refill are, by necessity, mutually exclusive. Statler said that, in his opinion, it is achieving flood control targets and achieving flow targets that are mutually exclusive.

But that's just reality, said Litchfield – there has never been enough water to go around, even when salmon weren't a part of the operational equation. We have always had to make tradeoffs between water uses; the current frustration is that flood control is being treated as a hard constraint. I hear that frustration, he said, but the reality is, we can only draft Dworshak and Grand Coulee once a year, and there are always going to be people who want more water for a given purpose. However, for the salmon managers to disengage from this operational issue is an abrogation of their responsibility, given the fact that it's too late to change the flood control operation this year, said Clark.

So when you ask the federal parties to figure it out, does that mean there is no further need for TMT to discuss it? Silverberg asked. We would like the TMT to discuss whatever the federal parties come up with, Nielsen replied. It sounds to me as though what you're asking is that we start to think outside a box that continues to deliver an impossible situation, said Litchfield – a lot of that thinking is going on in the Biological Opinion development process.

Recognizing that this is a long-term issue, do you have a preference in the near-term? MacKay asked. Is there an operation you would like to see during the coming week? In response to a question, McGrane and MacKay said a flow of about 240 Kcfs at McNary would yield a gradual refill by May 31 at Grand Coulee. After a brief discussion, Wagner suggested that the action agencies should target a flow of 240 Kcfs at Lower Granite during the coming week.

Keith Underwood said this is unacceptable to the tribes; they want to see a June 4 elevation of 1265 feet at Grand Coulee, and a flow of 240 Kcfs would yield an elevation of only about 1255 feet. McGrane noted that, to achieve 1265 by June 4, McNary outflow would have to be held at no more than 220 Kcfs through the end of May. After a few minutes of additional discussion, the TMT recommended that the action agencies maintain 240 Kcfs at McNary next week; the TMT will revisit this operation at next week's meeting.

8. Recommended Operations.

Recommended operations were covered during the previous agenda item.

9. Status of TMT Goals and Objectives.

Silverberg said that, as was discussed at the last meeting, her perspective is that, at this moment in time, while everyone is waiting for the BiOp to come out, it doesn't make a lot of sense to devote much more discussion to TMT goals and objectives. Rather, she said, let's see what's in the BiOp, then revisit goals and objectives in June and July. It was so agreed. Litchfield noted that, in his view, the discussions the TMT has had to date have born fruit – the discussion of Dworshak and Grand Coulee operations we've had today, for example, were easier than the same discussions last year, because we have set some agreed-upon priorities.

Turner noted that the goals and objectives document is included as an appendix of the Water Management Plan, and asked whether the TMT feels that continues to be appropriate. Yes, was the reply, although Silverberg noted that it should be made clear that the goals and objectives appendix is a draft.

10. Next TMT Meeting Date and Agenda Items.

The next meeting of the Technical Management Team was set for Thursday, May 18, from 9 a.m. to noon at the Corps' Northwestern Division Headquarters, unless the salmon managers call Henriksen to tell her the meeting is canceled, following their discussion of this issue at next Tuesday's FPAC meeting. Meeting notes prepared by Jeff Kuechle, BPA contractor.

TMT ATTENDANCE LIST

MAY 11, 2000

Jacqueline Abel	Facilitator	503/282-5920
Ruth Abney	COE	503/808-3939
Scott Boyd	COE	503/808-3943
Dick Cassidy	COE	503/808-3938
Ken Dragoon	PacifiCorp	503/262-4951
Kim Fodrea	Reclamation	503/872-2802
Richelle Harding	D. Rohr & Associates	503/771-7754
Cindy Henriksen	COE	503/808-3945
Jim Litchfield	Consultant	503/222-9430
Robyn MacKay	BPA	503/230-3385
Christine Mallette	ODFW	503/872-5252 x 5352
Kyle Martin	CRITFC	503/731-1314
Jim Nielsen	WDFW	360/902-2812
Mike O'Bryant	Columbia Basin Bulletin	503/281-9102
Chris Ross	NMFS	503/230-5416
Donna Silverberg	Facilitator	503/248-4703
Geir Solberg	ENA	503/464-8816
Rudd Turner	COE	503/808-3935
Paul Wagner	NMFS	503/231-2316
Marv Yoshinaka	USFWS	360/696-7605

On Phone:

Name	Affiliation	Phone
Steve Clark	Reclamation	
Margaret Filardo	Fish Passage Center	
Jim Heinsenreiter	Enron	
Dusica Jevremovich	Fish Passage Center	
Eric Lightner	IDFG	
Ningjen Liu	Idaho Power	
Joe Lukas	Grant County PUD	
Pat McGrane	Reclamation	
Jerry Markle	Colville Tribes	
Kevin Nordt	PGE	
Craig Sprankle	Reclamation	
Dave Statler	Nez Perce Tribe	
Glen Traeger	Avista Energy	
Keith Underwood	Spokane Tribes	
Eva Williams	El Paso Merchant Energy	

TECHNICAL MANAGEMENT TEAM

BOR: *Kim Fodrea\Pat McGrane*

NMFS: *Paul Wagner\Chris Ross* BPA: *Scott Bettin\Robyn MacKay*

USFWS: *Marv Yoshinaka\Bob Hallock\Susan Martin*

OR: *Christine Mallette \Chuck Tracy* WA: *Jim Nielsen* ID: *Ed Bowles\Steve Pettit*

MT: *Jim Litchfield* COE: *Cindy Henriksen\Rudd Turner*

TECHNICAL MANAGEMENT TEAM

MEETING NOTES

May 18, 2000

CORPS OF ENGINEERS NORTHWESTERN DIVISION OFFICES – CUSTOM HOUSE

PORLAND, OREGON

DRAFT

I. Greeting and Introductions

The May 18 Technical Management Team meeting, held at the Custom House in Portland, Oregon, was chaired by Cindy Henriksen of COE 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.

Silverberg welcomed everyone to the meeting, then led a round of introductions and a review of the agenda.

2. Flow Recommendations for Week Ending May 28; Respond to Spokane Tribe's Grand Coulee SOR.

In reply to a question from Silverberg, Henriksen said the main purpose of today's meeting is to respond to the SOR covering Grand Coulee operations, submitted by the Spokane Tribes on May 16. Having heard from Marv Yoshinaka that there would be no new SOR from the salmon managers this week, she said, we had agreed not to meet today; however, it was decided to convene this conference call to reply to the Spokane Tribe's SOR, and to make sure everyone has a full understanding of what may happen next week..

It was noted that Keith Underwood, the originator of the Spokane Tribes' SOR, was not, in fact, on today's conference call; Paul Wagner said he had sent Underwood an email, outlining NMFS' proposed response to the SOR. In the email, I advised him to call in today if he wanted to discuss the SOR further, Wagner said; he has not done so.

It was noted that the Spokane Tribes' SOR requests the following specific operation:

- Operate the Federal Columbia River Hydropower System to meet the following Lake Roosevelt pool elevations: 1240 by May 21, 1253 by May 28 and 1265 by June 4.

The goal of this SOR is to avoid the entrainment of the approximately 500,000 yearling kokanee which the tribe plans to release by the first week in June. The full text of the SOR is available via the TMT website.

Rudd Turner noted that, as the current TMT spreadsheet shows, Grand Coulee is expected to reach elevation 1265 feet about ten days later than the date requested by the Spokane Tribe. So we'll still reach the goal, but it will be delayed by a couple of weeks? asked Tom Lorz of CRITFC. That's essentially correct, Turner replied. Is there some biological reason why the release of these fish from the net pens couldn't occur a week or two later? Lorz asked. I believe that the later in June the release occurs, the greater the potential for temperature problems, Jim Nielsen replied. CRITFC's Kyle Martin said that, based on his experience, water temperatures don't start to become a problem at the Lake Roosevelt net pens until the second week in June; as long as the weather continues cool and cloudy, temperature won't be a problem, he said.

Henriksen noted that the SOR also requests specific Lake Roosevelt operations on May 21, May 28 and June 4. If you look at this week's spreadsheet, for the week ending May 28, Grand Coulee is expected to refill only to about elevation 1244 feet, nine feet lower than the level requested by the tribe. With a target of 1244 feet, Henriksen said, the week-average flow at Priest Rapids is expected to be 120 Kcfs; at McNary, 215 Kcfs. Obviously, she said, if we attempt to store more water during that period, that will have a detrimental impact on flows.

Martin observed that if the Corps had not adhered to a conservative flood control strategy, there would be more water available to accommodate requests like the Spokane Tribe's. He asked whether BPA would be willing to purchase a quantity of water from Canada in order to accommodate Underwood's request. No, that's not an option, replied Scott Bettin.

Henriksen said that, in the absence of an SOR from FPAC, the Corps is assuming that the proposed operation laid out in the current spreadsheet is acceptable to the FPAC membership. That is not necessarily a correct assumption, Nielsen replied; what, exactly, are the action agencies proposing to do? NMFS' recommendation is for a weekly average flow of 230 Kcfs at McNary for the week ending May 28, Wagner replied, with the goal of refilling Grand Coulee by July 4. In response to another question, Wagner said a McNary flow of 230 Kcfs should allow Grand Coulee to fill slightly next week; if natural flows increase, it could fill significantly.

In response to a question from Martin, Bettin said Priest Rapids flows are expected to be in the 140 Kcfs-150 Kcfs range next week. After a few minutes of discussion, Silverberg summarized by saying that, from what she has heard today, it sounds as though NMFS' first priority is to maintain flows at McNary; NMFS' second priority is to begin refill at Grand Coulee as soon as the runoff begins in earnest in the Snake River, and NMFS' third priority is Hanford Reach flows. That's correct, Wagner replied.

Any opposition to NMFS' proposals? Silverberg asked. Let's just say we're not prepared to elevate it to the IT at this time, Nielsen replied. I wouldn't say we're opposed, said Marv Yoshinaka, but I wish there was some way we could accommodate the tribal request. Nielsen added that, given the poor conditions currently in the river, the Spokane Tribe is asking for something that really can't be provided without further degrading conditions in the lower river.

Henriksen said the Corps is aware of the fact that the other TMT members are not pleased with the current situation; she noted, however, that, if current conditions continue, McNary flows could be about 200 Kcfs during June; average flows at Priest Rapids could be as low as 115 Kcfs for the month of June. There was never any guarantee that the flow objectives could be met, she said; we are, however, trying to do the best we can with the resources we have. I have no problem with the choices that are being made today, said Henriksen, but I do want to be sure that everyone is fully aware of what the consequences of those choices could be. That's all too clear, Nielsen replied – I hope NMFS is willing to revisit the current flood control strategy in the new Biological

Opinion.

So to summarize, said Silverberg, I'm hearing that the operating agencies will attempt to meet a weekly average flow of 230 Kcfs at McNary during the week ending May 28, and that they will begin refilling Grand Coulee as soon as natural flows pick up in the Snake River. That's correct, Henriksen replied.

In response to a question from Silverberg, Henriksen said the Corps has increased Albeni Falls outflow from 30 Kcfs to 35 Kcfs, slowing refill at that project in an effort to help out any way possible. That's appreciated, said Pat McGrane – it helps take some of the pressure off Grand Coulee.

It sounds, then, in general, as though the TMT is not comfortable with what's going on, currently, in the system; however, there isn't much we can do with the system to alleviate the situation, so this is the best operation we can come up with to meet everyone's needs to the greatest extent possible. Is that a fair summary? she asked. Yes, Wagner replied.

3. Next TMT Meeting Date and Agenda Items.

The next meeting of the Technical Management Team was set for Thursday, May 25, from 9 a.m. to noon at the Corps' Northwestern Division Headquarters. Meeting notes prepared by Jeff Kuechle, BPA contractor.

TMT ATTENDANCE LIST

MAY 18, 2000

Scott Boyd	COE	503/808-3943
Ken Dragoon	PacifiCorp	503/262-4951
Cindy Henriksen	COE	503/808-3945
Kevin Nordt	Enron/PGE	503/464-7240
Mike O'Bryant	Columbia Basin Bulletin	503/281-9102
Rudd Turner	COE	503/808-3935

On Phone:

Name	Affiliation	Phone
Scott Bettin	BPA	
Kim Fodrea	Reclamation	
Richelle Harding	D. Rohr & Associates	
Steve Huston		
Jim Lindstrom		
Jim Litchfield	Consultant (Montana)	
Tom Lorz	CRITFC	
Kyle Martin	CRITFC	
Tina McCarty		
Pat McGrane	Reclamation	
Jim Nielsen	WDFW	
Donna Silverberg	Facilitator	
Craig Sprankle	Reclamation	
Glen Traeger	Avista Energy	
Marv Yoshinaka	USFWS	

TECHNICAL MANAGEMENT TEAM

BOR: *Kim Fodrea\Pat McGrane*

NMFS: *Paul Wagner\Chris Ross* BPA: *Scott Bettin\Robyn MacKay*

USFWS: *Marv Yoshinaka\Bob Hallock\Susan Martin*

OR: *Christine Mallette \Chuck Tracy* WA: *Jim Nielsen* ID: *Ed Bowles\Steve Pettit*

MT: *Jim Litchfield* COE: *Cindy Henriksen\Rudd Turner*

COLUMBIA RIVER REGIONAL FORUM

TECHNICAL MANAGEMENT TEAM

RE: May 25, 2000 Meeting

FACILITATOR'S NOTES ON FUTURE ACTIONS

Facilitator: Patricia McCarty for Donna Silverberg

The following is a list of items the Technical Management Team (TMT) discussed at its last meeting that will require future action or discussion.

Minutes & Facilitator's Notes:

Comments on the prior meeting minutes of the May 8th conference call and the May 11th meeting are due Friday, 5/26/2000 by 5 p.m. Minutes for the May 18th conference call were not available for review, but should be on the TMT home page by the end of the week.

Hanford Reach Update

Joe Lukas reported on the prior two week's activities at the Reach, and on the projection for the week ending May 28th. He noted that at a couple of different times during the previous two weeks there had been lower than expected flow levels at Priest Rapids. They are implementing an alarm system to address the problem. For the week ending May 28th they anticipate operating at +/- 30 kcfs.

Status of the Fish Curves

Fish Passage Center provided a memo with attached graphs in response to the earlier request for fish data in a different format. Jim Nielsen gave a brief overview of the points made in the memo and questions followed. BPA and Montana clarified that they did not expect to be using the information to manage to the peak passage. They and other members expressed their interest in using the information to understand the passage season more fully and thereby make more informed decisions. Several members expressed how helpful the new format was.

ACTION: It was agreed that the Fish Passage Center would put this information on its web page to be updated as the season progresses.

ACTION: This item will be retained on the TMT agenda for periodic review.

Status of the Milner Flows

BOR reported that the flow is currently at 260 cfs and will stay at that level until flow augmentation begins, hopefully in about 2 weeks. It is likely that the upper Snake reservoirs will fill at different times rather than uniformly. That water is expected to be available at Lower Granite in late June to early July.

NMFS noted that there is a larger number of sub-yearling chinook this year in the upper Snake, and that the passage is likely to be in early July. FPC suggested TMT manage to the average passage to be safe.

USFWS does not yet have a report from the Boise office on impacts of low flows on endangered snails.

Review of Current System Operations

Reservoir operations: COE reported that it is through managing for flood control and is attempting to meet refill goals. Priorities continue to be meeting the flow objective at McNary and refill of Grand Coulee. See TMT web page for spreadsheet with individual operation data.

COE's Dick Cassidy presented spill and total dissolved gas data. Gas levels and responses are different this year than last and the reason is unclear. Spill is being adjusted daily to meet water quality waivers. COE is having trouble getting the spill at Bonneville above 90 Kcfs without exceeding the gas cap.

ACTION: Report on the spill and TDG will become a regular part of TMT meetings.

Fish migration: Utilizing the information provided as links on the TMT web page NMFS reported on the juvenile and adult migration. Generally, the numbers are running high and increasing.

The BOR, COE and Idaho seem to have different information regarding the timing for refill at Brownlee. There's a possibility that projections for Brownlee will differ from the current COE spreadsheet.

System Operation Requests

SOR 2000-21 The AA's will attempt to meet McNary flow objective of 220 Kcfs through the week ending June 4th as a first priority. Second priority is refill at Grand Coulee. It was agreed that Grand Coulee will fill no more than 10 feet over the coming week with any additional water to be passed downstream to increase Columbia River flows. There are no specific flows stipulated for Priest Rapids.

Next Meeting: 6-1-2000 9 a.m. – 12 noon

ACTION: John Yearsly will present temperature data requested earlier.

ACTION: USFWS/Bob Hallock will give a briefing on sturgeon flow augmentation and the status of the Libby spill test planned for June 12.

ACTION: The River Forecast Center will give a presentation to answer the question of the 2 MAF discrepancy between the SSARR and the WSF for Grand Coulee.

TECHNICAL MANAGEMENT TEAM

MEETING NOTES

May 25, 2000

CORPS OF ENGINEERS NORTHWESTERN DIVISION OFFICES – CUSTOM HOUSE

PORLAND, OREGON

DRAFT

I. Greeting and Introductions

The May 25 Technical Management Team meeting, held at the Custom House in Portland, Oregon, was chaired by Rudd Turner of COE and facilitated by Patricia McCarty. 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 Cindy Henriksen at 503/808-3945.

McCarty welcomed everyone to the meeting, then led a round of introductions and a review of the agenda.

2. Review of Minutes from May 18 Meeting.

A few changes were made to the minutes from the May 11 TMT meeting; the official minutes from the May 18 conference call have not yet been received. Turner asked that any additional changes be provided to Henriksen by close of business Friday, May 26.

3. Hanford Reach Update.

Joe Lukas reported that, for the week ending May 14, Priest Rapids flows averaged 179 Kcfs, so the 150 Kcfs minimum flow was maintained. On May 10, a dispatcher error caused flows to drop below 150 Kcfs for a couple of hours, said Lukas; the problem was fixed quickly, and we're working to ensure that it doesn't happen again. During the week, a total of 96 random sites were monitored; only 17 fish were sampled. Index seining counts were high, with 697 fish sampled, average size 44.2 mm.

For the week ending May 21, average flows dropped to 166 Kcfs; the 150 Kcfs minimum flow was maintained through Sunday, at which point the project operators went to the +/- 30 Kcfs flow band. At that point, flows varied between 120 Kcfs and 152 Kcfs. A total of 72 random sites were monitored, and field personnel sampled a total of 17 subyearling chinook. Index seining sampled 609 fish, average size 44 mm.

This week, flows have bumped up a little, Lukas said; average flows have been just under 170 Kcfs, and we anticipate that the +/- 30 Kcfs flow band will be in effect throughout the rest of this week. We are holding our standard bi-weekly conference call tomorrow at 9 a.m. to discuss the program in general, as well as what the operation will be over the weekend, Lukas said.

When do you anticipate that the subyearlings will start moving out, so that we begin to see them at McNary? Turner asked. I would think that will begin to occur soon, Lukas replied. How does the size of the fish at this point in the season compare to last year? Paul Wagner asked. It's very similar, Lukas replied – on May 12 last year, the average size was also 44 mm.

4. Status of Fish Curves.

Jim Nielsen distributed copies of a memo from Michele DeHart of the Fish Passage Center to Paul Wagner, titled "Fish Passage Index Data." As you'll recall, Nielsen said, this was developed in response to a memo from Paul to Michele, attempting to define what Cindy Henriksen, Robyn MacKay and Jim Litchfield had described as their view of an alternative way to present the fish passage data, as well as their view of the management use of this information.

Michele and the Fish Passage Center staff have devoted considerable time and effort to developing this memo and the graphs included in this packet, Nielsen said. I'm not going to go into a great amount of detail, he said; basically, in our view, what we have here is an alternative way of looking at the data. However, said Nielsen, it's still the same data that

is on the Fish Passage Center homepage. Over the years, we have found that the cumulative plots that have long been on the FPC homepage are the most useful tool for assessing juvenile passage at the various sites in the river.

We have also found that you can't really use a predictor to assess smolt passage, Nielsen continued. You can develop a predictor; in fact, the FPC has done that – it's essentially the same one that is on the DART homepage. What we've found, however, is that you don't know when the run is over until it is basically over. It's another tool, said Nielsen, but it's dangerous to think that you can predict when the peak will pass or when the run is going to be over, at least until you're well into the season.

It seemed to us that the reason for this assignment was that Jim, Cindy and Robyn were trying to manage somehow to the peak of the run, Nielsen continued – to predict when the peak had occurred, and respond, in a management sense. MacKay replied that the intent of this request was not to manage to anything in particular; we were mainly interested in looking at the data and seeing how it was tracking. I certainly wasn't intending to use this information as the basis for unilateral decisions, she said – I simply wanted to be able to look at it, along with a number of other tools.

Nielsen observed that the tails of the run are also very important; the planning dates NMFS included in the Biological Opinion are intended to encompass the entire run, based on historic passage at the various sites. You can't treat the outmigration as a homogenous population; there are a number of sub-populations within each run. If you manage for the central portion of the run, he said, you could be harming one or more of those sub-populations, which is inconsistent with the intent of the Biological Opinion. Another thing you need to bear in mind is the impact of system operations on fish passage, said Nielsen – if you increase flows when fish are in the river, the index will go up, and vice-versa.

Again, said Nielsen, in our experience, predictive tools are of limited use in flow augmentation management; also, from a strategic standpoint, our objective is to provide flow augmentation and spill over the course of as much of the run as possible.

The group then spent a few minutes going through the information presented in the packet, and the various factors, such as system operations and the timing of hatchery releases, that influence run timing from year to year. DeHart reiterated the concern that trying to manage for the middle or majority of the run would have a detrimental impact on many of the listed populations, many of which are migrating in low abundance at the tail of the run. Litchfield said his point, in asking for this information, was not that the TMT should be concentrating its flow augmentation resources on the middle of the run; what this tells me, he said, is that we need to be very cautious about management decisions that will compromise our ability to provide good migratory conditions for fish at the tail end of the run.

In response to a question from DeHart, the general view among the TMT membership was that this mode of displaying the current fish passage indices (plotted against daily index counts for each of the past 15 years) is a useful tool from an in-season management perspective. This being the case, DeHart said the Fish Passage Center will put periodic updates of this information up on its web page through the season.

All of this really makes me wonder how the salmon managers develop their flow requests, said Kim Fodrea – you want a lot of flow during the peak of the run, but you also want a lot of flow when it isn't the peak of the run. Essentially what we're doing is managing according to the reservoirs, DeHart replied – the flow target, as every fishery agency around the table knows, is not a hard constraint. Basically, we operate the system from reservoir elevation to reservoir elevation – that's what drives the weekly operation, more than anything else. The fish are always going to be there during the season, said DeHart, but what really drives operations is reservoir elevations.

5. Status of Milner Flows.

Fodrea reported that Milner flows are currently about 260 cfs; they have been at that level for a little over a week, and will likely stay there until flow augmentation begins from the Upper Snake in a week or two. We have also been discussing the chances of refilling all of the Upper Snake storage projects, Fodrea said; it now appears pretty unlikely that all of the projects will fill at the same time in 2000. Jackson and Palisades should fill some time in the next 10 days, she said, but American Falls is already drafting. Cascade Reservoir and the Boise projects are also likely to fill within the next 10 days. Bearing all of that in mind, said Fodrea, it looks as though Upper Snake flow augmentation

will begin in about two weeks, and that water will show up at Lower Granite by late June or early July.

Wagner said that, based on Billy Connor's analysis, subyearling Snake River chinook timing appears normal this year; for that reason, the early July time-frame for the beginning of the Upper Snake flow augmentation appears reasonable, at this point. He noted that subyearling chinook numbers are very high this year, possibly due to supplementation.

6. Review of Current System Conditions.

A. Reservoir Operations. Turner said the spreadsheet for this week reflects the fact that the Lower Granite spring-season flow objective has dropped slightly this week, to 96.3 Kcfs, a reflection of the most recent runoff volume forecast for that basin. The McNary seasonal flow objective is still 260 Kcfs. Turner noted that flood control operations are now complete; the reservoirs are now attempting to refill, with the goal of achieving full pool in the end of June to Fourth of July weekend time frame. Snake River flows have been increasing over the last few days, and are now nearly 100 Kcfs at Lower Granite. According to the current forecast, flows should continue close to this level over about the next two weeks, Turner said. Last week, the average flow at McNary was 233.6 Kcfs, slightly above the agreed-upon flow objective of 230 Kcfs.

Nielsen noted that it now appears that Idaho Power is not operating to achieve refill at Brownlee by June 4, as shown in the spreadsheet; that, rather than passing inflow in the 23 Kcfs range, that project will probably be releasing something closer to 10 Kcfs. Ningjen Liu confirmed that, at this point, Idaho Power doesn't expect Brownlee to refill until the second or third week of June; they believe that inflows to the project will be considerably lower than those shown in this week's TMT spreadsheet. He added that Hells Canyon outflow is currently about 12.5 Kcfs; average outflow during the remainder of the refill period will likely be about 14 Kcfs. It was noted that others in the region, including Ted Day of Reclamation, believe the Brownlee inflow forecast in the current spreadsheet is probably more accurate than Idaho Power believes; if so, Brownlee could be full by the end of May.

B. Spill and TDG. Dick Cassidy distributed a series of graphs, showing daily spill volumes and TDG levels at Lower Granite, Little Goose, Lower Monumental, Ice Harbor, McNary, John Day, The Dalles and Bonneville Dams for the period of May 18-25. He noted that the spill cap has fluctuated significantly at Ice Harbor this year, as the Corps has adjusted spill volumes to try to stay within 115% forebay TDG at McNary. Part of the problem is that, systemwide, gas responses have been somewhat different this year than they have been in the past, Cassidy said; this may have to do with water temperatures or barometric pressure, but no one knows for sure, at this point.

Cassidy said similar difficulties have occurred this year at Bonneville Dam, where the Corps has had considerable difficulty maintaining 115% TDG at the Camas/Washougal monitoring station. Basically, when we spill 95 Kcfs at Bonneville, we're seeing TDG levels above 115% at Camas/Washougal; when we drop spill down to 90 Kcfs, we're considerably under 115%, so we're constantly adjusting between those two volumes in an effort to stay right at 115%, Cassidy said.

C. Fish Migration. Wagner provided the following list of fish migration bookmarks for TMT reference and for use during the weekly meetings, for those participating by phone:

Juvenile Migrants:

Tables: <http://www.fpc.org/2000Daily/passindx.htm>

Cumulative Graphs: <http://www.fpc.org/Passgraphs/passgraph.asp>

PIT-Tags:

Snake River Wild Chinook: <http://www.cqs.washington.edu/dart/esu/matrix.1w00>

Snake River Wild Steelhead: <http://www.cqs.washington.edu/dart/esu/matrix.sts00>

Snake River Sockeye: <http://www.cqs.washington.edu/dart/esu/matrix.sc00>

Snake River Wild Fall Chinook: : <http://www.cqs.washington.edu/dart/esu/archive/matrix.3w99>

Mid-Columbia Wild Steelhead: : <http://www.cqs.washington.edu/dart/esu/matrix.stc00>

Adult Migrants: http://www.fpc.org/2000Daily/7_Day_Adults2000.htm

Wagner noted that index numbers for yearling chinook at Lower Granite have held steady at about 20,000 per day for the past week or so; yearling chinook numbers are now increasing at McNary. Steelhead counts at Lower Granite jumped from 71,000 on May 22 to 219,000 by May 24; McNary steelhead counts are also increasing.

Moving on to cumulative passage information, Wagner said that, according to current estimates, the peak of the subyearling chinook run is now past at Lower Granite. He noted that, due to changes in the timing of this year's Ringold Hatchery release, there are still significant numbers of steelhead migrating past Lower Granite and down through the system; we will be seeing steelhead at McNary for a protracted period, and need to keep flows as high as possible. Wagner added that adult chinook passage continues at extremely high levels; the current count is about 172,000 spring chinook, nearly triple the 10-year average, with the total run now predicted to be in the 190,000 range. In summary, said Wagner, the fish are still moving; they're still migrating down from the Lower Snake, and therefore, we need to keep flows up at McNary for the foreseeable future.

7. New System Operational Requests.

On May 23, the salmon managers submitted SOR 2000-21. Supported by ODFW, USFWS, WDFW, NMFS and IDFG, SOR 2000-21 requests the following specific operation:

- Meet flows of at least 220 Kcfs at McNary Dam for the week ending June 4, 2000.

Nielsen went briefly through the details of this SOR, the full text of which is available via the TMT's Internet homepage. Basically, he said, the goal of this SOR is to keep flows as high as possible at McNary Dam during the peak of the spring migration season, while still continuing to refill Grand Coulee. What we heard today about lower-than forecast flows from Brownlee makes this even more critical, he said. One additional note, said Nielsen; while the SOR does reference the need to maintain flows at Priest Rapids to protect emergent fall chinook, it does not specify a desired flow level. Wagner noted that the 1998 Biological Opinion specifies a seasonal average target of 135 Kcfs at Priest Rapids; it is NMFS' hope that it will be possible to maintain Priest Rapids flows in the 120 Kcfs-130 Kcfs range for the week ending June 4, rather than the 107 Kcfs shown in the current spreadsheet.

Is the goal at this point Grand Coulee refill, or Priest Rapids flows? asked Scott Bettin. This is the time of year when that becomes a balancing act, Wagner replied; essentially, we would like to hear from the action agencies what they feel is doable. Fodrea noted that, if Grand Coulee is used to make up the 10 Kcfs deficit in Hells Canyon discharge, that would increase Priest Rapids flow to the 117 Kcfs range next week. However, an additional 10 Kcfs discharge for seven days translates into about two feet in Grand Coulee elevation, MacKay observed. Nielsen noted that the current spreadsheet shows Grand Coulee refilling on June 30, but the Biological Opinion specifies that Grand Coulee be full by Fourth of July weekend. Turner added that, given the disagreement between the IPC and Corps runoff forecasts in the Snake, it is still possible that Brownlee might refill by the end of May, and that flows out of the Snake will be in the range shown in the current spreadsheet.

MacKay noted that, if Grand Coulee is to meet its refill target date, the project needs to fill about 10 feet per week. If we see that we're filling at an acceptable rate, she said, we can certainly look at trying to split the difference and release some additional water for flow. You have to watch both the rate of refill and flows downstream, MacKay said; if we do take that route, it wouldn't be very useful to try to set hard constraints. However, from a scheduling perspective, we need to know whether the first priority is refill, or if it is Priest Rapids flow.

After a brief caucus, Nielsen said the salmon managers would like to stick with the requested minimum target flow of 220 Kcfs at McNary. You're saying, then, that the 220 Kcfs target should be our primary objective, and that we should refill as much as possible once that target is achieved? Turner asked. That's correct, Nielsen replied. And if inflows are such that we can meet both the requested 220 Kcfs at McNary and the 10-foot weekly fill target, with water left over,

your preference would be to release that additional water? Turner asked. Yes, Nielsen replied. And Priest Rapids flows will be whatever they are in order to meet 220 Kcfs at McNary? Turner asked. Correct, Nielsen replied.

8. Recommended Operations.

Recommended operations were addressed during the previous agenda item.

9. Discussion of Need for TMT Meetings Until July.

After a brief discussion, it was agreed that the TMT will hold its regular weekly meeting next week (June 1); after that, the group will make a week-to-week decision about whether to hold a regular meeting, or whether, given conditions in the system, a conference call will suffice.

10. Other.

Nielsen said Marv Yoshinaka had asked him to remind the Corps that Dworshak Hatchery personnel are working on their intake screens. We're aware of that, Turner replied; Dworshak is expected to stay on minimum outflow through next week.

The other thing I wanted to mention is the fact that FPAC has been discussing summer operations at Dworshak; there was a lengthy discussion at our last meeting, which included input from the Nez Perce Tribe and CRITFC. The bottom line is that no one has really changed their position, said Nielsen; Idaho and the Nez Perce are sticking with their plan, as laid out in the waiver. The only thing they did say was that they recognize that, given conditions this year, waiting until after July 31 to draft Dworshak is not realistic, Nielsen said; the rest of the plan, however, stays in place – they want to reserve 17 feet of Dworshak storage for augmentation in September. Does that mean that Idaho and the Nez Perce may not object if we start to draft Dworshak sooner than July 31? Turner asked. That's my understanding, Nielsen replied. But there is no agreement as to when in July will be acceptable.

11. Next TMT Meeting Date and Agenda Items.

The next meeting of the Technical Management Team was set for Thursday, June 1, from 9 a.m. to noon at the Corps' Northwestern Division Headquarters. Meeting notes prepared by Jeff Kuechle, BPA contractor.

TMT ATTENDANCE LIST

MAY 25, 2000

Ruth Abney	COE	503/808-3939
Dick Cassidy	COE	503/808-3938
Michele DeHart	Fish Passage Center	503/230-4288
Ken Dragoon	PacifiCorp	503/262-4951
Kim Fodrea	Reclamation	503/872-2802
Richelle Harding	D. Rohr & Associates	503/771-7754
Tim Heitenrader	ENRON NA	503/464-7462
Bao Lê	USFWS	360/696-7605
Jim Litchfield	Consultant	503/222-9430

Robyn MacKay	BPA	503/230-3385
Christine Mallette	ODFW	503/872-5252 x 5352
Patricia McCarty	Facilitator	503/295-6420
Jim Nielsen	WDFW	360/902-2812
Kevin Nordt	PGE	503/464-7240
Mike O'Bryant	Columbia Basin Bulletin	503/281-9102
Rudd Turner	COE	503/808-3935
Maria Van Houten	ENRON NA	503/464-7961
Paul Wagner	NMFS	503/231-2316

On Phone:

Name	Affiliation	Phone
Scott Bettin	BPA	503/230-4573
Steve Hemstrom	Avista Utilities	
Dusica Jevremovich	Fish Passage Center	
Ningjen Liu	Idaho Power Co.	
Joe Lukas	Grant County PUD	
Glenn Traeger	Avista Energy	
Keith Underwood	Spokane Tribes	

TECHNICAL MANAGEMENT TEAM

BOR: *Kim Fodrea\Pat McGrane*

NMFS: *Paul Wagner\Chris Ross* BPA: *Scott Bettin\Robyn MacKay*

USFWS: *Marv Yoshinaka\Bob Hallock\Susan Martin*

OR: *Christine Mallette \Chuck Tracy* WA: *Jim Nielsen* ID: *Ed Bowles\Steve Pettit*

MT: *Jim Litchfield* COE: *Cindy Henriksen\Rudd Turner*

COLUMBIA RIVER REGIONAL FORUM

TECHNICAL MANAGEMENT TEAM

RE: June 1, 2000 Meeting

FACILITATOR'S NOTES ON FUTURE ACTIONS

The following is a list of items that the Technical Management Team (TMT) discussed at its last meeting that will require future action or discussion, some of them before the next TMT meeting. For a complete discussion of agenda items, see the meeting minutes when they are posted on the TMT homepage.

1. Minutes from the May 18 conference call and the May 25 meeting were reviewed and several corrections and clarifications were offered by TMT members. Any additional changes should be sent to Cindy Henriksen by 5PM, Friday, June 2. Revised minutes will be posted on the TMT homepage.
2. Joe Lukas will said that he will offer Hanford updates for 2 or 3 more weeks. The next Hanford conference call will be June 9.
3. Paul Wagner will try to schedule a presentation by John Yearsley on EPA temperature modeling for the TMT meeting on June 15, since he was not available for today's meeting.
4. After a report on the status of Milner flows, TMT decided that this will no longer be an agenda item at every meeting, but the information will be posted on the TMT homepage.
5. TMT would like an update from USFWS about the status of snails. Jim Nielsen will contact Marv Yoshinaka about this item and it will be on the June 15 agenda.
6. After discussion of the SOR #00-1, from USFWS regarding Libby sturgeon flows, TMT agreed to take the following action:
 - (a) A smaller group will meet on Monday, June 4 at 9:00 to discuss the issues involved in this SOR. Members of that group are: Chris Ross, Jeff Laufle, Cindy Henriksen, Brian Morotz or Chris Hunter, Bob Hallock and Kate Walker (from the Helena office of USFWS), Scott Bettin, and Jim Litchfield.
 - (b) Cindy will arrange for a meeting room at the COE's office and will send out an email notice and a conference call-in number for this meeting for those who can't attend in person.

(c) TMT agreed that if this small group could reach consensus about the SOR, then operations based on that consensus could go forward without coming back to a TMT meeting.

(d) Bob Hallock agreed to bring what information is available regarding the Recovery Team's discussion and agreements to Monday's meeting.

(e) If the small group cannot reach consensus on Monday, they will decide whether to frame up an issue for the IT. Cindy will contact IT about the need for a possible conference call, preferably on Tuesday morning, June 6. TMT members should be prepared to brief their IT representatives, if necessary.

7. SOR 2000-22

During the discussion of this request, the Co-Managers stated that their current priorities are to maintain flows at Priest Rapids and McNary, even if it affects refill, although there is still a desire to refill by July 4. The order of priorities for the operation as requested in the SOR through the week ending June 11 are:

1. at least 120 Kcfs at Priest Rapids
2. 220 Kcfs at McNary
3. refill Grand Coulee

The Action Agencies agreed to try to operate to these priorities; Kim Fodrea will contact TMT members by the middle of next week if this request cannot be met.

8. Future TMT meetings

TMT agreed to meet via conference call next THURSDAY, JUNE 8, and set out the following agenda items for the call at 9:00 AM:

Update on sturgeon request and operations

Operations and system flow update

Hanford update

Note: the usual information on the TMT homepage will be updated next week, so check the homepage before the conference call for relevant documents

TMT will hold its next "regular" meeting on THURSDAY, JUNE 15, from 9:00 to 12:00 AM and items noted for that agenda include:

Update on the Dworshak meeting with Idaho and the Tribes which is to take place June 6

John Yearsley presentation on temperature modeling

Update on Snails

Update on Sturgeon

End of spill discussion--Snake River

Transportation at McNary

Hanford update

TECHNICAL MANAGEMENT TEAM

MEETING NOTES

June 1, 2000

CORPS OF ENGINEERS NORTHWESTERN DIVISION OFFICES – CUSTOM HOUSE

PORLAND, OREGON

DRAFT

I. Greeting and Introductions

The June 1 Technical Management Team meeting, held at the Custom House in Portland, Oregon, was chaired by Cindy Henriksen of COE and facilitated by Jacqueline Abel. 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.

Abel welcomed everyone to the meeting, then led a round of introductions and a review of the agenda.

2. Review of May 25 TMT Minutes.

A few changes were made to the minutes from the May 25 TMT meeting, after which Abel asked that any additional comments be submitted to Henriksen by close of business Friday, June 2.

3. Hanford Reach Update.

Joe Lukas reported that, for the week ending May 28, weekly flows averaged 147 Kcfs at Priest Rapids Dam. Flows last week generally dipped below 170 Kcfs, although they increased to 170 Kcfs + for one day. On that day, the 150 Kcfs minimum flow was maintained; on the other days, the +/- 30 Kcfs flow band was in effect. On Memorial Day weekend, the project operators were able to maintain average flows of about 140 Kcfs for all three days, Lukas reported.

Last week, we sampled 91 random sites, finding only four juvenile chinook, he continued. Index seining dropped to 570 fish, average fork length 48 mm. We're seeing fish grow through the peak susceptibility stage, Lukas said, and we are now on the decline, in terms of fish impacts. Flows this week have declined to about 130 Kcfs, and so we're on the +/- 30 Kcfs flow band again this week, he added.

How long will the Hanford Reach fish protection program continue this year? Henriksen asked. Until the average fork length reaches about 60 mm, Lukas replied -- we're still probably at least a couple of weeks away from ending the program for this year.

4. Temperature Modeling Update.

EPA is not available this week, said Abel; does NMFS have something to say? Just that EPA is working on some additional modeling scenarios from the Nez Perce Tribe for a June 6 meeting, Paul Wagner replied; that work was considered to be a higher priority than attending today's meeting. Will those results be presented to the TMT, at some point? Henriksen asked. They could give us a presentation any time after June 6, Wagner replied – basically, John Yearsley's schedule went from available to unavailable, because of these additional tasks. Will you continue to work with John to set that up? Abel asked. Yes, Wagner replied.

5. Report on Runoff Volume and Flow Forecasts.

Dave Westnedge of the River Forecast Center provided an overview of the RFC's flow and runoff forecasting techniques. As you'll recall, said Henriksen, at the last TMT meeting, there was a request to hear from the RFC about the reasons for the discrepancies between the volumes shown in the water supply forecast and the weekly TMT SSARR spreadsheet; Dave is here to give us that.

The first thing you need to bear in mind is that the spreadsheet is static in time, Westnedge began; it relies heavily on the monthly final forecasts, and reflects the water supply outlook at that time. The early-season forecasts are the driving force behind the SSARR, particularly in January, February and March. As we go through the month, other forecasts are issued, and we change the SSARR volumes in response to this updated information through the month. Basically, Westnedge said, we match the SSARR with what is actually happening in the system to make our short-term forecasts, which can, later in the season, translate into some changes in the volume forecasts later in the season.

Right now, Westnedge continued, we're seeing that, according to SSARR, in some areas, the runoff is basically over with, and the water supply forecast is too high. Bear in mind that the two models are different; there is a range of values we work within which we consider to be a reasonable error in both forecasts. Bear in mind as well that, if you see a 2 MAF difference at Grand Coulee between SSARR and the volume forecast, that's only a 2%-3% difference, which is well within our range of forecast error, Westnedge said. The two forecasts aren't always going to be the same, and the question is, which is correct? The answer is, we don't know, at this point.

We work hard to adjust the forecasts through time, said Westnedge, but discrepancies do occur. At Grand Coulee, temperatures have been below-normal through the year; we suspect that the Coulee forecast may be a little high, because the longer the runoff continues, the more water you lose. The bottom line is that there will likely be at least a 1 MAF difference between the SSARR and the Water Supply Forecast, which is well within the error bounds, Westnedge said. It would be nice if they were identical, but then you would be saying that one model is better than the other, and we don't know that that is the case, he said.

Westnedge put up an overhead, showing temperature departures at Boise, Grangeville, Missoula and Castlegar; he spent a few minutes going through this information, noting that there have been few, if any, above-average departures at any point so far in the season. Again, he said, the longer the runoff is drawn out, the more water you lose from the forecast volumes. We'll be making some adjustments to the forecast next week, he said, and the water supply forecast will likely decrease even further. Westnedge also put up an overhead showing runoff peaks for 2000; the bottom line is that most of the peaks this year were lower than forecast; we've probably seen the peak runoff everywhere except the Upper Columbia, and we may have seen the peak there as well. Basically, the temperature pattern for this year has been well below-average, so far, Westnedge said.

What's the reason for the loss of volume when the runoff is protracted? Litchfield asked. Evaporation, primarily, Westnedge replied; you also have increased irrigation withdrawals, because weather conditions are dry.

It appears that the water supply forecast has stayed fairly constant throughout the season, Wagner said. It has, Westnedge replied – the forecast has declined only very slightly through the season. The forecast is updated monthly based on physical water supply surveys, looking at snowpack and other factors, so it is based on real information.

In response to a question from Wagner, Westnedge said the RFC can no longer continue to run two models; for that reason, SSARR is being phased out in the next year or two, in favor of RFS.

Kyle Martin asked a series of technical questions, relating to the inconsistencies seen in the SSARR forecasts for various locations. Westnedge replied that, in this week's SSARR, August is added for the first time; there is still some smoothing that needs to occur (the discrepancy Martin has cited is in the August forecast.) We're switching models between July and August, Westnedge said, and sometimes there are inconsistencies that need to be smoothed out.

Again, he said, the SSARR runs will be going away, eventually – we're working with the Corps and BPA to develop the tool we'll use in the future. Litchfield asked why there were two tools to begin with; Westnedge replied that various agencies had developed forecasting tools in the past; SSARR and the water supply forecast model are the two that have stood the test of time. SSARR is a short-term flood forecast model, which can be run daily; its purpose is different from the Water Supply Forecast model, which is a longer-term forecast, updated monthly.

Just to be sure I understand, said Jim Nielsen, the difference between the two models is about 4% at Grand Coulee; you also indicated that you felt the SSARR forecast is probably the closest to reality. I think the water supply forecast is probably a little high, while the SSARR may be a little low, Westndege replied – again, even when those differences are rectified, the difference between the two will likely be about 1 MAF.

6. Libby Sturgeon Flows Update.

Bob Hallock said that, in years past, the Fish and Wildlife Service's sturgeon flow recommendations have been based on the 1995 Biological Opinion; we've tried a series of operations, working with relatively small volumes of water, as well as with abrupt pulses of water, he said. Some of USFWS' findings from past years' sturgeon operations include the following, he said: spawning is occurring; 10-degree water is optimal; we're getting, we think, about 5 million eggs per year, most fertilized; few are hatching, and we've found very few young-of-the-year. We can't really catch these fish until they're about three years old, he said, but we think most of the mortality is occurring in the first three weeks of life.

This year, we don't have the storage to reproduce historic flow conditions, said Hallock; with these constraints, we're having trouble achieving even the modest delisting criteria, 20 documented fish from a given year's spawning. For that reason, Hallock said, we're looking at a radical change of strategy -- we've taken some fish into the hatchery, and have 110,000 fertilized eggs. The specific operational recommendations at Libby Dam for sturgeon in 2000 include the following:

- Regulate flows at Libby Dam consistent with laws and treaties (including flood control objectives in place when the existing 1995 Biological Opinion was issued) to achieve flows at Bonners Ferry initially to maximize the survival of larvae to be released from the preservation stocking program and to promote natural recruitment for a new year class of sturgeon.
- Maintain minimum outflow until June 5. Then begin ramping up over a 6-day period until 25 Kcfs is being released and reaching Bonners Ferry by sunset of June 11. Larval sturgeon from the Kootenai Tribe Hatchery are expected to be available for release at that time. Specifics of ramp-up recommendations: between 4 Kcfs and 9 Kcfs, ramp up at no more than 1.25 Kcfs per day. Above 9 Kcfs, ramp up within established criteria to allow delivery of 25 Kcfs at Bonners Ferry by sunset June 11.
- After reaching 25 Kcfs release, maintain this rate for 19 days. In the event of an increased natural runoff event below Libby Dam during this 19-day period, continue to release 25 Kcfs until previously consulted-upon flood control criteria (near 1770 feet measured at Bonners Ferry) is approached.
- At the end of this 19-day period, ramp down to a minimum bull trout flow to be specified under separate cover by Region 6 of the USFWS. This ramp-down should be accomplished by a reversal of the specifics in Recommendation 2, above.
- The above recommendation, developed in consultation with NMFS, is based on a 6.45 MAF April-August runoff forecast, end-of-August reservoir elevation of 2439 feet, and approximately 1.21 MAF (including ramp-up and ramp-down volumes) being released each for sturgeon and salmon.
- The duration of this 25 Kcfs sturgeon flow recommendation may be extended depending on results of the June 1 water supply forecast.
- Water volumes necessary to conduct the recommended controlled spill tests at Libby Dam may be taken from the sturgeon release volume resulting in a slightly less than 25 Kcfs average release rate over the 19-day period.

So how will we deal with the shortage of water in 2000? Hallock asked. We're now proposing a 50/50 sturgeon/salmon split – 19 days of sturgeon flow, with ramp-up beginning on June 6, such that we reach 25 Kcfs at Bonners Ferry by the evening of June 12 (not June 5 and June 11, as specified above). One additional point, Hallock said – if the June 1 forecast is significantly different from the May final, then we can revisit these volumes.

Henriksen then distributed a graph, showing the results of the Corps' attempt to model what they thought was the sturgeon operation for the year; the graph shows inflow and outflow and reservoir elevations at Libby Dam for the period of May 29-August 30. This is pretty close to what Bob has described, the only wild card being that we show a 9 Kcfs bull trout flow through July, Henriksen said. I don't know whether or not that request will be forthcoming,

Hallock said – if it comes, it will be coming from our Montana office. The flow could be lower than 9 Kcfs; it will depend on how much water is available, basically.

In response to a question from Litchfield, Hallock said sturgeon take precedence over bull trout, because they are an endemic endangered species, while bull trout are a wide-ranging threatened species.

In response to a question from Litchfield, Robyn MacKay said that, basically, what we have is a fixed volume of flow augmentation water; Libby will top out at about 2451 feet on July 31, and will be drafted to elevation 2439 by August 31. In the meantime, we have to split that fixed volume between three listed species. And who made the decision to split the volume equally between salmon and sturgeon? Henriksen asked. The Fish and Wildlife Service and NMFS, Hallock replied. Based on what? Henriksen asked, is there documentation of this agreement between NMFS and the Fish and Wildlife Service to split some volume? Our two Biological Opinions are documentation, Wagner replied. And NMFS is OK that Libby isn't going to refill this year? Henriksen asked. Refill is desirable, but not mandatory, Wagner replied.

In response to a question from Litchfield, Hallock said that, if the June final forecast declines, the 9 Kcfs flow request for bull trout may go down as well. So this is the best information we have now, and it looks as though we can do all three of these operations, for sturgeon, salmon, and bull trout? Litchfield said. At this point, we think it may be possible, Hallock replied.

Are there concerns about this rapid ramp-up rate, from a bull trout perspective? Litchfield asked. It may have an effect, but nothing is ever perfect, Hallock replied. And the ramp-down rate is a similar concern? Litchfield asked. It's probably similar, yes, Hallock replied.

If we could split this into two administrative chunks, said Henriksen, we have the request from USFWS for sturgeon; you're now requesting that we start to ramp up on June 6, rather than June 5, and we've modeled that... can we agree to start the ramp-up with rates similar to those shown in Bob's request, such that we're at 25 Kcfs by the evening of June 12 – is that acceptable to the TMT? Henriksen asked. The second chunk, of course, is how we proceed from there. Also, she said, if we can agree on this overall plan, perhaps, as we've done in years past, we can ask a TMT subgroup to develop a recommended operation for salmon and bull trout.

Litchfield expressed a preference for a more cohesive approach, which would look at the summer operation as a whole. Perhaps we can reach agreement that there will be this sturgeon piece, the salmon piece and an operation for bull trout in the middle, with the details to be worked out by the small group, said MacKay. I just don't have the sense that we have a fully fleshed-out plan, Litchfield said.

I don't see how this is going to benefit white sturgeon in the Kootenai, said Chris Hunter of Montana Fish, Wildlife and Parks – sturgeon are spawning right now, and I don't see how jacking flows up to 25 Kcfs next week is going to help them. Also, he said, this recommendation was made without consulting the Sturgeon Recovery Team. This operation was agreed to by the Recovery Team last fall, Hallock replied – we look at 25 Kcfs as about half of what is needed. That's not true, Hunter said – that was never agreed to by the Recovery Team. I guess we disagree, Hallock said.

You can see my difficulty, said Litchfield – this is coming to me cold, and it just seems to me that bull trout are caught in the middle – what we decide to do next week is going to affect what we can do later in the summer. Montana has a real problem with this kind of double peak; the bottom line is that I need more time to study this, and talk about it with others in Montana before I can agree to it, Litchfield said – we need a more coherent, comprehensive plan that we all agree strikes a balance for all three species, for the entire summer period.

From our standpoint, we're not convinced there will be a benefit, and in fact, are concerned that there may be a detriment, to the sturgeon from this operation, Hunter said. What, specifically, are Montana's concerns? asked another participant. First, the wild fish are already spawning, Hunter replied. Those fish will continue to spawn up to about 13 degrees, Hallock replied. I'm also unclear how increasing flows will help the larval fish that are being placed in the river, when my understanding is that it is habitat that is the concern, Hunter said. The rearing habitat is a confined channel, with restricted predator access, Hallock replied.

I see three options at this point, said Abel – first, a small group could work over the details, but quickly, since the operation is scheduled to begin Tuesday. Second, the full TMT could continue to chew on this issue, although not all members may be particularly interested. Third, she said, you could choose to elevate the issue to the IT.

How soon could the small group convene? Nielsen asked. Probably on Monday, Henriksen replied. Hallock added that the request came late this year because we didn't know when the fish would be available to release; Bettin added that the strategy has also changed this year, to focus on supplementation, rather than natural spawning.

Nielsen noted, for the record, that Washington does not support splitting this volume, which was originally identified for salmon alone, between salmon and sturgeon.

Henriksen said she will set up a conference call for this Monday, June 5; those who would like to participate in person can come here, to the Custom House. The call will begin at 9 a.m. Jeff Laufle, Chris Ross, Bob Hallock, Brian Marotz (if available), Kate Walker from USFWS, Bettin, Litchfield, Henriksen will participate. Henriksen said she will assemble relevant technical data prior to the meeting; she asked that any data requests be submitted to her by later today.

Hunter asked for documentation on the Recovery Team's participation in this decision; Bettin and Hallock said they will see what is available, although Bettin warned that near-verbatim notes probably do not exist. Henriksen said she will send out an email to the other participants, informing them of the conference call number and other administrative details.

What's the next step, after the small group meets? Abel asked. I guess we would need to elevate it to IT, if we can't reach consensus, said Bettin – we need to make two decisions – when does the sturgeon operation begin, and what does the rest of the summer operation look like? The decision to start commits you to a course of action; once you start, you're committed, Litchfield said. I think we ought to know where we're going, before we start. So you want to see what the whole plan is, before you can agree to it? Abel asked. Correct, Litchfield replied.

It was agreed that, if the small group can reach consensus, then the operation may begin Tuesday, June 6. Abel observed that the IT meets Wednesday, if consensus is not achieved; however, that will not be soon enough for TMT purposes. We should probably give the IT a heads-up, then, that we may need an IT conference call on Monday afternoon or Tuesday morning, Abel said; Henriksen agreed to inform the IT that this issue should be on their radar screen.

7. Status of Milner Flows.

Kim Fodrea distributed the most recent monthly "teacup" diagram update. She reported that the projects are filling; Cascade filled this week. Anderson Ranch, Jackson Lake are also full; Palisades should fill later this week. Reclamation has been talking to Idaho Power, NMFS and others about when to begin flow augmentation, but there is no consensus on that yet, Fodrea said – those discussions are ongoing.

Does it still appear unlikely that all of these projects will fill at the same time? Jim Litchfield asked. Yes – American Falls is drafting, and Palisades is still filling, Fodrea replied. So if all of these projects fill at some point in the summer, but not at the same time, that doesn't count? Litchfield asked. That's correct – the accounting system only resets if all of the projects are full at the same time, Fodrea replied.

I had also understood that we were going to hear from the Boise USFWS office about what happened with the snail situation, Litchfield said. I would also like to hear that explanation, Nielsen said – it's probably a post-mortem at this point, but I would still like to hear what happened. I'll see if we can get a report on that at the next meeting, Abel said.

Fodrea added that the monthly teacup diagrams are probably no longer necessary, now that the flow augmentation season is almost upon us. It was so agreed.

8. Review of Current System Conditions.

It was agreed to skip this agenda item, and go directly to the SOR discussion.

9. Review of New System Operational Requests.

On May 31, the salmon managers submitted SOR 2000-22. Supported by ODFW, USFWS, WDFW, NMFS and IDFG, this SOR requests the following specific operations:

- Meet flows of at least 120 Kcfs at Priest Rapids Dam and 220 Kcfs at McNary Dam for the week ending June 11, 2000.

Nielsen spent a few minutes going through the contents of this SOR, the full text of which is available via the Fish Passage Center website. The only change to the justification from last week is that listed Mid-Columbia steelhead collections at Rock Island have been increasing and decreasing in response to increasing and decreasing flows; obviously these fish are still present in the system, and need to be moved down, Nielsen said.

On May 11, I thought I heard that the group had agreed that refill was the number one priority for this period, Abel said – is that still the case? I think this operation will refill Grand Coulee, Nielsen replied, although there are some unknowns, such as the effects of the sturgeon operation, which is not reflected in the spreadsheet. The short answer is that, from our perspective, flows at Priest Rapids and McNary are a higher priority than Grand Coulee refill, at least for the week ending June 11, Nielsen said.

We had talked about the need to fill ten feet per week at Grand Coulee in order to meet our refill schedule; I think it may be possible to meet both the refill target and the requested flow targets, said Fodrea. I agree, said Bettin. So you think it may be possible to meet everyone's needs by implementing this SOR? Abel asked. Yes, Bettin replied.

Do all of the supporters of this SOR agree that flows should take priority over refill? Henriksen asked. Refill will occur, but it just may occur later, perhaps in early July, Wagner replied. This spreadsheet shows flows of 221 Kcfs at McNary on July 9, with Grand Coulee full, he said – NMFS feels this is consistent with the philosophy of putting the water on the fish while they're present. We're willing to accept the risk to Grand Coulee refill, if it puts a little more water on the fish now, Wagner said.

The other thing is that you're shifting summer flow augmentation water into the spring period, Henriksen said – is NMFS OK with that as well? If it was a huge hit, we would be concerned, Wagner replied – we don't see this as a huge hit. What we're trying to do is balance Lower Columbia flows, Mid-Columbia flows, Snake River flows and refill, he said – it is a balancing act.

However, if you're less than full on June 30, that means you're shifting water from summer to spring, Henriksen said. That being the case, she said, is it really necessary to refill Grand Coulee completely, or should we just start drafting on July 1? In other words, if you're less than full on June 30, is there added value to touching full? The advantage of touching full is that you shape the water later, maximizing your late-summer flexibility, Wagner replied – whether or not we do that is a decision we can make later in June, but there may be benefit to that. We could get lucky, as we did with Dworshak this year, Nielsen observed.

One additional question, said Henriksen – you specify 220 Kcfs at McNary, and 120 Kcfs at Priest Rapids – what's the priority? Our concern is that, if flows come up in the Snake, you could decrease flows at Priest Rapids and still meet the 220 Kcfs flow target at McNary, Nielsen said. So the 120 Kcfs flow target at McNary is the number one priority, and the 220 Kcfs target at McNary is secondary? Rudd Turner asked. Yes, Nielsen replied – I would add that 120 Kcfs and 220 Kcfs are minimum targets, not maximums.

Fodrea said that, after hearing the technical details of this proposal, she is less optimistic that it will be possible to gain 10 feet of elevation at Grand Coulee if this SOR is implemented. It may be possible, she said, but it's looking less likely to me now. If refill looks like it's going to suffer, she said, I will need to contact the other TMT members to let them know that Reclamation has a concern.

The group briefly discussed when transportation will begin at McNary; Wagner suggested that this is a decision that should be made at TMT. Didn't FPOM start the technical discussion of that issue, and bring a recommendation to TMT

last year? Henriksen asked. Yes, but ultimately, it was a TMT decision, Wagner replied. We can discuss it further at a future meeting, Bettin said; everyone should probably be aware that we will need to make a decision fairly soon.

It sounds, then, as though SOR 2000-22 will be implemented, Abel said.

10. Recommended Operations.

Recommended operations were covered during the previous agenda item.

11. Discussion of the Need for June TMT Meetings.

After a brief discussion, it was agreed that the next full TMT meeting will be held June 15; a conference call will suffice for the June 8 TMT meeting date.

12. Other.

Nielsen distributed a recent memo on the subject of the removal of the Lower Granite behavioral guidance system from Jim Ceballos of NMFS. Vern Parry of the Corps said removal of the BGS is scheduled to start the morning of Monday, June 5. We would need to shut off three units for a couple of hours, he said; after that, the units can be turned back on. It's possible that it may take longer, said Bettin; if so, can we exceed MOP for a few hours, then run the water out later?

After a brief discussion, no TMT objections were raised to the possible storage of water above MOP, with the water to be run out later in the day, to return the project to MOP as soon as possible, as a contingency if needed. If something unexpected happens, and flows in the Snake increase significantly, we will probably reschedule this operation, added Turner. It was recommended to delay the dive work until the following week, when flows will presumably be lower.

13. Next TMT Meeting Date.

A Technical Management Team conference call was set for Thursday, June 8, from 9 a.m. to noon at the Corps' Northwestern Division headquarters; the next full TMT meeting was set for Thursday, June 15, from 9 a.m. to noon. Meeting notes prepared by Jeff Kuechle, BPA contractor.

TMT ATTENDANCE LIST

JUNE 1, 2000

Jacqueline Abel	Facilitator	503/282-5920
Ruth Abney	COE	503/808-3939
Scott Bettin	BPA	503/230-4573
Scott Boyd	COE	503/808-3943
Dick Cassidy	COE	503/808-3938
Ken Dragoon	PacifiCorp	503/262-4951
Kim Fodrea	Reclamation	503/872-2802

Bob Hallock	USFWS	
Tim Heizenrader	Enron	503/464-7462
Cindy Henriksen	COE	503/808-3945
Cathy Hlebechuk	COE	503/808-3942
Jim Litchfield	Consultant – Montana	503/222-9480
Robyn MacKay	BPA	503/230-3385
Michael S. Magee	COE	503/808-3977
Christine Mallette	ODFW	503/872-5252 x 5352
Kyle Martin	CRITFC	503/731-1314
Jim Nielsen	WDFW	360/902-2812
Kevin Nordt	Enron/PGE	503/464-7240
Mike O'Bryant	Columbia Basin Bulletin	503/281-9102
Rudd Turner	COE	503/808-3935
Maria Van Houten	Enron	503/464-7961
Paul Wagner	NMFS	503/231-2316
David Westnedge	River Forecast Center	

On Phone:

Name	Affiliation	Phone
Ed Bowles	IDFG	
Margaret Filardo	Fish Passage Center	
Steve Hemstrom	Avista Utilities	
Chris Hunter	Montana	
Dusica Jevremovich	FPC	
Ningjen Liu	Idaho Power	
Joe Lukas	Grant PUD	
Pat McGrane	Reclamation	
Steve Pettit	IDFG	
Glen Traeger	Avista Energy	

TECHNICAL MANAGEMENT TEAM

BOR: *Kim Fodrea\Pat McGrane*

NMFS: *Paul Wagner\Chris Ross* BPA: *Scott Bettin\Robyn MacKay*

USFWS: *Marv Yoshinaka\Bob Hallock\Susan Martin*

OR: *Christine Mallette \Chuck Tracy* WA: *Jim Nielsen* ID: *Ed Bowles\Steve Pettit*

MT: *Jim Litchfield* COE: *Cindy Henriksen\Rudd Turner*

COLUMBIA RIVER REGIONAL FORUM

TECHNICAL MANAGEMENT TEAM

RE: June 5, 2000 Meeting

FACILITATOR'S NOTES ON FUTURE ACTIONS

TECHNICAL MANAGEMENT TEAM

MEETING NOTES

June 5, 2000

CORPS OF ENGINEERS NORTHWESTERN DIVISION OFFICES – CUSTOM HOUSE

PORLAND, OREGON

DRAFT

I. Greeting and Introductions

The June 5 Technical Management Team conference call to discuss summer sturgeon, bull trout and salmon operations at Libby Dam, was chaired by Cindy Henriksen of COE. 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.

Henriksen welcomed everyone to the meeting, then led a round of introductions and a review of the agenda.

II. Summer Operations at Libby Dam.

Henriksen said she had sent out a packet of modeling scenarios, seven in all, requested by various TMT participants, on Friday. Scenario 3 is the one that was handed out at TMT on Thursday; Scenario 1 was developed by the Reservoir Control Center, and is basically another bookend, showing what might happen if we make Libby refill a priority, Henriksen explained. Essentially what Scenario 1 shows is that if you want to refill Libby by July 31, in this particular

water year, it won't be possible to get equal volumes for sturgeon and salmon – you would wind up with 0.89 MAF for sturgeon and 1.5 MAF for salmon, based on current forecast information, Henriksen said.

The two BiOps aren't linked up by equal volumes, Litchfield observed. Was the Fish and wildlife Service just trying to find some balance in its proposed summer operation at Libby? That's correct, Bob Hallock replied. I thought the salmon water was going to be taken out over two months, said Brian Marotz. Why don't we go through the rest of the scenarios, suggested Chris Ross – there are a number of options.

We have not yet heard anything definitive from the Helena USFWS office, said Henriksen. The recommendation for bull trout is going to be a base flow of 6 Kcfs for the month of July, Hallock replied; they will not be specifying a ramp-up rate for salmon. He added that the sturgeon ramp-up rate was specified at last Thursday's TMT meeting; at Marotz's request, he re-stated it: ramp up at a rate of no more than 1.25 Kcfs per day when the flow is 9 Kcfs or below; above 9 Kcfs, ramp up within established criteria as needed to allow delivery of 25 Kcfs at Bonners Ferry by sunset June 12.

We might be able to flatten that out a little bit, to say 1 Kcfs per day when below 9 Kcfs, Hallock said. We'll also have to factor in what the generating units can tolerate, Henriksen said.

Scenario 2 is an operation similar to what was proposed in 1999 – a three-day pulse at full powerhouse capacity, followed by a flat 18-day incubation flow of 25 Kcfs at Bonners Ferry, followed by a level-out flow targeting elevation 2439 feet by August 31, Henriksen said. She noted that this scenario, too, fails to completely refill Libby.

Scenario 3, again, is what was handed out on Thursday at TMT, showing 19 days at 25 Kcfs, followed by a ramp-down to 9 Kcfs, Henriksen said. What ramp-up did you assume for salmon flows? Litchfield asked. Looks like 1 Kcfs, Henriksen replied. Do these volumes include the 4 Kcfs base flow? Marotz asked. Yes, Henriksen replied.

Scenario 4 is also an interpretation, by the Corps, of the USFWS request, Henriksen said; however, we modeled a slightly lesser volume, in case the water supply forecast goes down to 6 MAF. If we have the lesser volume to work with, it appears likely that we could only maintain the sturgeon flow for about 15 days, she said; there would also be less water available for salmon in August. In response to a question from Litchfield, Henriksen said her feeling is that the 6.4 MAF shown in the spreadsheet looks pretty solid; in other words, the remaining runoff volume is likely to be closer to 6.4 MAF than 6 MAF.

In Scenario 5, again, we assumed a runoff volume of 6.4 MAF, Henriksen said. However, this scenario shows a 6 Kcfs flow for bull trout in between the sturgeon and salmon operations; that means more water is available for sturgeon and salmon – for example, 22 days at 25 Kcfs, Henriksen said. This gets to a point where a Libby/Arrow swap becomes a possibility, Hallock observed. True, Henriksen replied.

Scenario 6 is the same as Scenario 5, except we assume 6.0 MAF of runoff, she continued. It shows about 1 MAF each for sturgeon and salmon, which means about 17 days of sturgeon flow. What is the 6 Kcfs bull trout flow based on? Marotz asked. It's based on the fact that we don't have enough water to go around here – it's not an optimum situation, Hallock replied. If we did the Libby-Arrow swap, we could even out flows for bull trout and salmon, Marotz observed. That might work, Hallock agreed. What is the reservoir elevation that makes the swap more attractive? Marotz asked. The fuller you are, the more attractive it is, Henriksen replied.

Marotz observed that, with the sturgeon fry test going on, the descending limb of the hydrograph is very important. At that point, you're probably better off to have more water, rather than less, due to the predator-prey ratio, Hallock replied – basically, we could have a couple more days at 25 Kcfs, or a little less flow for a longer period – we don't know which would be best, at this point.

Where will the larvae be released? Marotz asked. Above Shorty's, Hallock replied.

Scenario 7 shows a Libby/Arrow storage exchange, looking at the possibility of operating to an August 31 elevation of 2449, Henriksen said – we would start with the 19 days at 25 Kcfs, then move to a steady outflow through August 31 to achieve elevation 2449 feet. Salmon flow would be the volume released in July and August; 10 Kcfs. What volume would come out of Arrow? Ross asked. The 10 feet of storage between elevation 2439 feet and 2449 feet, Henriksen

replied.

Do you think the Canadians would go for a swap, given these elevations? Jim Litchfield asked. We don't know, at this point, Henriksen replied – one looming question is whether the 6 Kcfs bull trout flow is acceptable, she said. Hallock noted that, with the swap, it would be possible to maintain a flow closer to 11 Kcfs through July and August.

If we compare Scenarios 5 and 7, said Litchfield, Scenario 7 delivers the requested 19 days of sturgeon flow, but doesn't try to equate sturgeon and salmon volumes. True, but the U.S. might have to pay for the swap, Hallock said. We can't speak for the Canadians, said Scott Bettin; if we request it, we do have to pay. The fuller we can get the reservoir, the more likely it is that the Canadians will pay for it, Henriksen said. If we went to a steady outflow of 8 Kcfs, rather than 10 Kcfs, after the sturgeon operation, I would guess that would get us up to closer to elevation 2455; it doesn't hurt bull trout too much, and we would get the requested sturgeon operation, Litchfield said.

In response to a question from Marotz, Henriksen said Libby/Arrow swap negotiations typically begin in late June or early July, once the project operators have a better idea of what the summer operations will be at Libby – again, the fuller the reservoir is, the more likely the swap becomes.

The group spent a few minutes discussing the details of the swap and ramping rates, particularly during ramp-down. I'm more concerned, again, about the ramp-down than the ramp-up, Marotz said. What they're showing in Scenario 7 is a ramp-down rate of 10 Kcfs, 3 Kcfs, 2 Kcfs and 1 Kcfs, over four days, Ross said.

One question, said Marotz – in the past, it has been important to get Libby as full as possible, to provide the maximum shaping later in summer. Is that still important? Ross replied that it is desirable, in terms of avoiding a double peak and shaping the maximum volume later in the summer period; however, this year, NMFS recognizes that compromise is necessary due to water supply and meeting needs of multiple listed species. NMFS is willing to split the available volume between sturgeon and salmon, with whatever is left over for bull trout. Even if we target refill, based on these scenarios, it won't be possible to completely refill Libby in 2000, he said.

I would prefer to see something closer to 9 Kcfs for bull trout, said Marotz; again, I would prefer a slower ramp-down at the back end of the sturgeon operation. The Libby/Arrow swap appears to be critical as well, in terms of smoothing things out between salmon and bull trout. I would suggest that we also need to leave ourselves an opportunity for a full reset, once the June final water supply forecast comes out, Ross said. Bettin noted that there is nothing compelling to suggest that the forecast will do anything but go down slightly. Still, there is probably no reason to run blind, until that June final comes out, Ross said.

One other question, said Marotz – the tiered flow approach in an average water year was 25 Kcfs at Bonners Ferry, not Libby – there was supposed to be some side flow below the dam. We're looking at about 1 MAF less than the usual 2.8 MAF in 2000, so that's a problem, Hallock said. The group briefly discussed the impact of the non-implementation of the IRCS in 2000; Henriksen noted that the Corps did make some concessions in 2000, in terms of rounding the corner on the Libby flood control operation.

In response to a question from Litchfield, Marotz said that, from his perspective, the ramp-down operation shown in Scenario 3 is preferable to the one shown in Scenario 7. What if we were to graft the Scenario 3 ramp-down onto an operation similar to that shown in Scenario 7, Litchfield asked – maintain a flow of 8 Kcfs or 9 Kcfs through August 31, once we ramp down from the sturgeon operation, and do our best to get the Libby/Arrow swap? Litchfield asked. In other words, drop the steady flow from 10.7 Kcfs to 8 Kcfs, which will give us a higher reservoir elevation than 2451 feet. That sounds pretty good, said Marotz. That would give us at least a couple of feet of additional elevation, said Litchfield; at that point, we can explore the swap with Canada. If they say no, we can explore other options, such as buying a swap or looking at a bigger double peak. You can't buy a swap, Bettin said – we can only ask, and the Canadians have the opportunity to say no.

Let me make a proposal, said Hallock. If you look at Scenario 5, it shows 22 days for sturgeon – we could change that to 19 days, and put the rest of that water into a more gradual ramp-down and refill. That would give us a higher reservoir elevation, as well as a lesser double peak. I think we'd be closer to 2455 feet of elevation, at that point, which would be more attractive to the Canadians. We would still go down to 6 Kcfs for bull trout, however, he added. Where would 8

Kcfs for bull trout leave us? Litchfield asked. The Corps is attempting to model that scenario today, Henriksen replied.

That's not too much different from what I was suggesting, Litchfield said. I'm suggesting that we adopt a plan like Scenario 7, although there is some risk that, if we don't get the swap, NMFS will still request the water, which will put us at 2439 feet at the end of August. That isn't necessarily bad, from a negotiating standpoint, he said; we can present our plan and tell the Canadians that, with their help, we can maintain elevation 2449 feet at Libby.

After a few minutes of additional discussion, Henriksen said the Corps will email the new modeling scenario once it is available. In the interim, she said, it sounds as though there is agreement to begin the sturgeon operation as requested by the USFWS on Thursday. That being the case, that operation will begin tomorrow morning; we will ramp up at a rate of 1.25 Kcfs until we reach 9 Kcfs. We should then be able to reach maximum powerhouse capacity by June 12, in the morning, she said. In response to a question, Hallock said the larvae will be released the evening of June 12. What's the prediction for the actual flow at Bonners Ferry, once we're at 25 Kcfs at Libby? Marotz asked. Probably somewhere in the neighborhood of 35 Kcfs, Henriksen replied. So you'd go from 9 Kcfs to 14 Kcfs on June 11, and from 14 Kcfs to 25 Kcfs on June 12? Ross asked. Yes, Henriksen replied. And the sturgeon operation will continue for 19 days? Litchfield asked. Yes, Hallock replied.

We would then go to the ramp-down shown in Scenario 3? Litchfield asked. We can, Henriksen replied. It depends on how hard you want to push refill, Hallock added. The new scenario shows a ramp-down from 25 Kcfs to 15 Kcfs to 12 Kcfs to 10 Kcfs to 9 Kcfs to 8 Kcfs, Henriksen said. In response to a question, Hallock noted that one unit at Libby, 5 Kcfs, is equivalent to a stage change of about six inches at Bonners Ferry.

Hallock added that the more water that is put into the ramp-down and July base flow for bull trout, the less water will be available for refill, and the greater the chances of a high-magnitude double peak.

Ultimately, Litchfield said the new model run shows something closer to Scenario 7, with the above ramp-down rate, plus 8 Kcfs for bull trout. I guess we can wait to see what the model run tells us, and discuss it further, he said. My thinking is that we would then maintain 8 Kcfs through the summer at Libby, and look at what maximum elevation that delivers, he said – we can then share that with the Canadians, together with the impacts of a potential Libby/Arrow swap.

Do we really need to see the model run, if we pretty much know where we're going, or should I just email that out? Henriksen said. That works for me, Marotz replied. We will present it at Thursday's TMT meeting, then, as the scenario to which the TMT subgroup has agreed, Henriksen said; in the interim, I will email it out as soon as it is available, probably later today.

Again, said Henriksen, the new scenario will include ramping up beginning tomorrow, at a rate of 1.25 Kcfs per day. Once we hit 9 Kcfs, we will increase Libby outflow to 14 Kcfs-15 Kcfs over the weekend, and reach 25 Kcfs by the morning of June 12. We will then have 19 days at 25 Kcfs, followed by a five-day ramp-down from 25 Kcfs to 8 Kcfs, as shown above; we will then hold 8 Kcfs through the month of July, reaching approximately elevation 2451 by July 31. Assuming a Libby/Arrow swap and 8 Kcfs outflow through the month of August, that puts us at elevation 2449 feet on August 31, she said. We may need some flexibility either on the number of days at 25 Kcfs, or on the 8 Kcfs flow, in order to ensure adequate elevation at Libby, given the uncertainty about the June final forecast, Henriksen added. That sounds good enough for now, Marotz said – however, I am anxious to know whether or not the Libby/Arrow swap is doable for this year. Bettin replied that it is generally late July or early August before the swap can be consummated.

In response to a question from Rudd Turner, Hallock said the biological objective of the 2000 sturgeon operation is two-fold: to support the current wild adult spawning, and to find out where the bottleneck is for the larval sturgeon – we need information about what's really happening to those fish, he said. Will there be specific monitoring measures in place to tell us whether we've succeeded or failed? Litchfield asked. Yes, Hallock replied – basically, we're hoping to learn whether it makes more sense to put our efforts into the incubation period or the swim-up period, for sturgeon.

Administratively, it sounds as though we have a potential plan to get out, Henriksen said; however, there may still be some questions about the monitoring program. Perhaps we can get an update on where we are, monitoring-wise, on June 15, she suggested. Bettin said that should be possible. Also, Henriksen said, some documentation was requested at

last week's TMT meeting, with respect to recovery team decisions. There are no notes, but I don't think we have a disagreement on the recovery team' support for the larval experiment any more, Hallock said. That's correct, Marotz replied. So there was agreement to shift the focus of the 2000 sturgeon operation from adult fish movement to the larval experiment? Henriksen asked. Yes, Hallock replied, although we've continued to work on the details of that operation. We do have some concerns about shifting the focus from the natural fish to the hatchery fish, Henriksen said. The delisting criteria is to achieve a natural self-sustaining population, Hallock replied.

Again, said Henriksen, there is a TMT conference call on Thursday; this item will be on the agenda. Just a heads-up, said Henriksen, that the Canadians are extremely displeased about this year's sturgeon operation, in particular, the fact that, by increasing Libby outflow now, we are ensuring that Lake Koocanusa will not refill. Jim Abbott from Canada will likely be on the call, to make the Canadian point of view known, she said. If we have a June final water supply forecast on Thursday, we will update this graph accordingly.

With that, the conference call was adjourned. Notes prepared by Jeff Kuechle, BPA contractor.

III. Participants

Ruth Abney COE

Scott Bettin BPA

Bob Hallock USFWS

Richelle Harding D. Rohr & Associates

Cindy Henriksen COE

Jeff Laufle COE

Jim Litchfield Consultant -- Montana

Brian Marotz MDFWP

Mike O'Bryant CBB

Chris Ross NMFS

Rudd Turner COE

TECHNICAL MANAGEMENT TEAM

BOR: *Kim Fodrea\Pat McGrane*

NMFS: *Paul Wagner\Chris Ross* BPA: *Scott Bettin\Robyn MacKay*

USFWS: *Marv Yoshinaka\Bob Hallock\Susan Martin*

OR: *Christine Mallette \Chuck Tracy* WA: *Jim Nielsen* ID: *Ed Bowles\Steve Pettit*

MT: *Jim Litchfield* COE: *Cindy Henriksen\Rudd Turner*

COLUMBIA RIVER REGIONAL FORUM

TECHNICAL MANAGEMENT TEAM

RE: June 8, 2000 Meeting

FACILITATOR'S NOTES ON FUTURE ACTIONS

Facilitator: Patricia McCarty for Donna Silverberg

The following is a list of items the Technical Management Team (TMT) discussed at its last meeting that will require future action or discussion.

The meeting was a conference call.

Minutes & Facilitator's Notes:

The minutes of the June 1st meeting and the June 5th conference call were not reviewed but are available on the TMT web page. Comments and changes should be sent to the COE by the end of Friday, June 9th.

Libby Sturgeon Flows Update

Cindy Henriksen from the COE summarized the subgroup's June 5th agreement regarding the operation at Libby. Currently outflow is increasing and the release is expected to be at full powerhouse capacity of 25 Kcfs by June 12th, for a period of 19 days, followed by a ramp-down to 8 Kcfs. If the new water supply forecast, which is expected within a couple of days, is lower, the 19 day duration may be shortened or the 8 Kcfs flow will be reduced. The trigger for a change is currently the in-flow forecast. Jim Abbot, from the Canadian Parliament, suggested that TMT consider lake level as a trigger due to the Canadian concerns about recreation and resident fish needs. The Libby-Arrow swap will continue to be discussed as a possibility to help out. The subgroup will meet again on Monday to finalize the operation.

ACTION: Members expressed interest in seeing the study plan and getting updates on the progress of the operation. That information will be posted on the TMT web page.

Status of the Milner Flows

BOR reported that the flow is currently at 260 cfs. NMFS and the BOR will continue to discuss an option raised involving releasing some water now and holding it at Brownlee for release later.

McNary Transportation

The numbers of sub-yearlings, the flows, and water temperature are nearing the point where the Plan calls for transportation. The COE will continue to monitor river conditions and ask that salmon managers do the same. Transportation could begin next week if conditions continue to change.

System Operation Requests

SOR 2000-23: After a lengthy discussion of the request, NMFS made, and the action agencies agreed to implement, the following recommendation: McNary flows will remain at a minimum of 170 Kcfs. If there is sufficient water for higher flows, the additional water will be apportioned between McNary flows and refill at Grand Coulee. July 5th is still the target date for refill at Grand Coulee.

Next Meeting: 6-15-2000 9 a.m. – 12 noon

ACTION: Paul Wagner and Cindy Henriksen will try to arrange for the June 29th TMT meeting to be in Lewiston, ID. They will give an update on this next week.

TECHNICAL MANAGEMENT TEAM

MEETING NOTES

June 8, 2000

CORPS OF ENGINEERS NORTHWESTERN DIVISION OFFICES – CUSTOM HOUSE

PORTLAND, OREGON

DRAFT

I. Greeting and Introductions

The June 8 Technical Management Team meeting, held at the Custom House in Portland, Oregon, was chaired by Cindy Henriksen of COE and facilitated by Patricia McCarty. 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.

McCarty welcomed everyone to the meeting, then led a round of introductions and a review of the agenda.

I. Report from Small Group on Libby Operations

Henriksen reported that, as agreed at the last TMT meeting, the Libby operations subgroup met Monday; they were able to agree upon the commencement of a sturgeon operation, which is now underway. She noted that there are two graphics on the TMT webpage, related to that meeting; the meeting notes are also available. Again, she said, the subgroup agreed to begin the sturgeon operation on June 6; current Libby outflow is 7.250 Kcfs, up from 4 Kcfs at Monday. We expect to be releasing full powerhouse capacity, near 25 Kcfs, by Monday, June 12. Larval monitoring will occur during that release; we hope to hear more about that monitoring plan later in today's meeting, once Bob Hallock joins the call, Henriksen said.

Rudd Turner noted that Hallock had sent him a written study plan yesterday; he added that it would be helpful to know whether or not the hatchery release of larval sturgeon is on schedule.

The current plan is to continue the sturgeon flow for 19 days, followed by a ramp-down to 8 Kcfs; Henriksen said; it looks as though we will then maintain a flow of 8 Kcfs from Libby through the end of August. We also talked about the need for some flexibility in either the duration of the sturgeon operation or the subsequent 8 Kcfs outflow level, in the event that the Libby forecast, which is not yet available, goes down, Henriksen said. We also talked about the need for another small group meeting, after the June final forecast is available, probably later today or tomorrow, she added.

Would the trigger for changing the sturgeon operation be predicted inflow, or would it be lake level? Jim Abbott asked. Bob Hallock would need to answer that question, Henriksen replied.

Ross said his understanding, from Monday's discussion, was that changes to the inflow forecast, not lake elevation, would drive any adjustments to the timing and duration of the sturgeon flow. I would suggest, from an upstream perspective, that lake level would be a better driver, Abbott said – that would be more comfortable for us, in terms of predictability.

Do we have any idea what lake level the planned flows will produce? Elia Farrell asked. We have the model runs, over a spread of potentially-available volumes, Ross replied; there is additional information coming in later this week that will provide more definition to this situation.

At this point, Bob Hallock joined the call; Henriksen restated Abbot's question about what information would trigger any modification to the sturgeon operation; Hallock replied that the inflow forecast will drive any changes to the planned operation. He added that the definitive request for bull trout flows, from USFWS Region 6, is 6 Kcfs. Is there any flexibility on the 19-day duration of the sturgeon operation? Henriksen asked. Yes, if the forecast goes down, Hallock replied.

I would suggest, from an upstream perspective, that the lake level would be a better driver for any changes to the sturgeon operation, Abbott said – from the point of view of both resident fish and recreation, Kookanoosa Lake level is the key. The problem is that we didn't achieve our refill target, Hallock replied; we're trying to balance a less-than-optimum situation for three listed species, and no one is especially happy about this proposed operation.

If the pulse is intended to support the release of the sturgeon larvae, if those larvae go through the system more quickly than you thought, how will you monitor that? Farrell asked. There is natural spawning going on in the river, Hallock replied; there are also six sturgeon in the hatchery, two of which have already spawned. There is a 10-day incubation period, and the fish will then be released when they're about 5 days old, so we're not looking to shorten that sturgeon flow period. Four more fish are yet to spawn in the hatchery, he added. The flow we're producing right now is focused on which fish? Henriksen asked. Both wild and hatchery fish, Hallock replied.

If the decision is made to change the duration, what mechanism will be used to make that decision? Farrell asked. The decision will be made here at TMT, Hallock replied. So you will convene the TMT, and they will jointly make that decision? Farrell asked. Again, the only reason we will change the operation is if the inflow forecast goes down significantly, Hallock replied.

Farrell asked whether data from the sturgeon monitoring program will be posted on the TMT website. We didn't plan to do that, Hallock replied, but I don't know why we couldn't. He said he will provide monitoring data to the Corps as they become available, for posting on the TMT website. In response to another question, Henriksen said the Corps will post the USFWS sturgeon study plan on the TMT webpage as well.

Farrell asked whether Canadian Fisheries and Ocean personnel were involved in the development of this operation. Yes, Hallock replied – Colin Spence of the B.C. Ministry of the Environment was involved in the monitoring program, and helped develop the study plan.

Abbott then requested an opportunity to address the TMT. Just a couple of things from the Canadian perspective, he said. First of all, there was a tremendous sense of optimism when the Libby Coordination Agreement was signed. Unfortunately, there was also an expectation that there would be a higher degree of predictability, with respect to Kookanoosa Lake levels and diking concerns downstream, Abbott said. There are a lot of concerns in Canada about recreation values; that's why we were hoping that lake levels, rather than inflow predictions, would drive this operation.

– lake levels are more tangible. There are also resident fish concerns; we were concerned that there may be a new ESA listing for Libby bull trout.

Abbott thanked Henriksen for her coordination efforts; the bottom line, however, from the Canadian perspective, is the issue of predictability. We recognize that you didn't hit the refill target at Libby, Abbott said; while we did our best to minimize the optimism that accompanied the signing of the Libby Coordination Agreement, there is still a degree of angst on our side of the border. All I'm suggesting, on behalf of my constituents, is that anything we can do that will lead to more predictability and consideration of the resident fish issue would be gratefully received on this side of the border, Abbott said.

One thing you could do, from a practical perspective, is encourage B.C. Hydro to participate in a Libby/Arrow swap in 2000, Hallock observed – that would go a long way toward keeping Kookanoosa Lake levels up, and would also help smooth out the flow situation. There are a lot of biological and recreational benefits to the swap, said Chris Ross; I encourage you to work with B.C. Hydro and others to make the swap a reality this year. I will do so, Abbott said.

Again, said Henriksen, the Libby operations subgroup will reconvene once the water supply forecast is received; after a brief discussion, it was agreed to convene the small group discussion on Monday afternoon, June 12, at 2 p.m. Ross, Scott Bettin, Hallock, Henriksen and Jim Litchfield agreed to participate in this discussion.

Is the hatchery release still scheduled for Monday night? Turner asked. There is no change that I'm aware of, Hallock replied.

II. McNary Transport.

Turner said the Corps has been looking at McNary fish counts over the past few days; subyearling counts are beginning to exceed yearling counts, and flows are going to be dropping this week. Water temperatures have also increased from 57 degrees to 59 degrees over the past several days, Turner said; the bottom line is that some things are starting to come together which indicate that it may be time to start collecting and transporting fish at McNary. The Corps is prepared to do that, if there is agreement at TMT.

The salmon managers discussed this on Tuesday, said Marv Yoshinaka replied; at that time, it looked like the yearling and subyearling counts were still pretty close, and temperatures still looked OK. Given the fact that we're still seeing spring-like conditions in the system, our recommendation is that the transport operation not begin at this time, Yoshinaka said; we would like another opportunity to discuss it next Tuesday. Kyle Martin added that the weather forecast shows a warming trend beginning the middle of next week; at that point, we are expected to enter the summer weather pattern. We'll discuss that next Tuesday as well, Yoshinaka said.

If flows drop, temperatures come up and we continue to see more subyearling than yearling migrants at McNary, is there any willingness to consider starting the transport operation sooner? Turner asked. Not at this time, Wagner replied. What criteria will you use to make that decision? Turner asked – all we have to work with now is the yearling/subyearling ratio. The 1998 BiOp referenced springlike conditions, in addition to the yearling/subyearling ratio, Wagner replied; we're monitoring the situation, but are not quite ready to flip the switch on McNary transport. I may call you Monday, depending on what the situation looks like, Turner said.

III. Milner Flows.

Fodrea reported that she had sent out an email in response to an FPC newsletter that said Milner flows were 260 cfs, below the levels requested by the fishery agencies. I thought we did not want to use salmon water to maintain Milner flows at 1.5 Kcfs, she said; can you confirm that? What happened was that the Fish and Wildlife Service received a copy of the request from Reclamation to use part of the Upper Snake salmon flow augmentation volume for snails once Milner flows dropped, said Yoshinaka – we brought that question to the salmon managers, and the response we received was that the salmon managers did not support using a portion of the salmon water for snails. They did support keeping Milner flows up around 1.5 Kcfs, said Yoshinaka, but only if additional sources of water could be found. No other sources of water have been identified, he said, so we really had no choice but to allow flows to drop. In other words, he said, there was no desire, on the part of the salmon managers, to allow Milner flows to drop below 1.5 Kcfs,

but we had no choice. I'll send you an email clarifying that, Yoshinaka added.

Pettit said Idaho would like to see some of the 427 KAF of storage water released now to improve flows below Milner; however, we would like that water to be held at Brownlee, for release later in the summer period for salmon. We have talked to Idaho Power about that proposal, said Fodrea, but they are not willing to do anything more than pass that water through at this time. Ningjen Liu confirmed that this is the case – the reservoir is going to be full anyway, he said, so there is no space to store your water. When do you anticipate Brownlee will be full? Litchfield asked. By Fourth of July weekend, Liu replied. Could you store some water between now and July 4? Litchfield asked. The reservoir is nearly full now, Liu replied – there is very little space to store anything now, and I don't see much merit to that operation.

Wagner suggested that a TMT subgroup, including NMFS, IDFG, Reclamation and Idaho Power, discuss this issue on a conference call tomorrow. I'll check on availability from this end, Pettit replied. Wagner said he will contact Pettit to set up the call.

IV. Spill Levels.

Jim Ceballos said he had looked at the TDG data yesterday, and was surprised that spill volumes were not increased last night. I think we need a teletype to the operators of Goose, Granite, Monumental and McNary, instructing them to increase spill volumes at those projects, he said; I recommend that those volumes be increased tonight. We will look at that data today, as we do every day, and will get a teletype out later today, said Henriksen. The levels will be set according to state protocols, she said; bear in mind that we are not allowed to exceed the 115%/120% standards. However, if there is room to increase spill volumes, we will do so, she said.

V. New System Operational Requests.

Prior to today's meeting, the salmon managers submitted SOR 2000-23, covering operations at McNary and Grand Coulee Dams. This SOR, supported by ODFW, USFWS, WDFW, NMFS and IDFG, requests the following specific operations:

- Maintain a minimum flow of 170 Kcfs at McNary for the week ending June 8
- Fill Lake Roosevelt to no more than elevation 1268 feet during the week ending June 8. If additional water is available over and above that target, it should be used to increase McNary flows.

Yoshinaka went briefly through the contents of this SOR (the full text of which is available via the Fish Passage Center web page) He noted that the intent of this SOR is to protect the remainder of the spring migration.

Henriksen again expressed displeasure that language about the flood control operation was included in the justification; I know we've been over that before, Yoshinaka replied.

This doesn't seem to be in line with our previous agreement that we will meet a 10-foot-per-week refill goal at Grand Coulee, said Fodrea; however, if it's what the salmon managers would like to see, we are willing to maintain 170 Kcfs at McNary. Robyn MacKay said she was somewhat surprised by the magnitude of the forecast drop in flows this week; she suggested that it may be more appropriate to focus on a single goal in the SOR – flow at McNary, rather than specifying an elevation target as well.

I think the track we were on last week was to avoid a steep drop in flows, at Priest Rapids in particular, said Wagner; flows at Priest Rapids met or exceeded our expectations. That being the case, said MacKay, I would suggest that we scratch the 1268-foot elevation target at Grand Coulee – pick a flow target, and if we find that Grand Coulee isn't filling, we'll talk.

Henriksen suggested that this may be a good time for the TMT to take a longer-term view of operations; Reclamation would like to refill Grand Coulee by July 5; the salmon managers would like to have more than 170 Kcfs at McNary. Kim has said that, if flows are significantly higher than 170 Kcfs, she would like to fill Grand Coulee more; perhaps that's where we should focus, and say that anything over 170 Kcfs should be stored. If current refill rates hold, said

Fodrea, by this Sunday, we'll still have 30 feet to fill – that's about 10 feet per week, which is why we're concerned about the 1268-foot limit.

Yoshinaka said that, from the Fish and Wildlife Service's perspective, it would be all right to fill Coulee later than July 5.

Ross suggested that the action agencies target at least 170 Kcfs at McNary, and use any additional flow for storage, rather than increased flow at McNary, even if it means filling to 1270 feet. Yoshinaka said he could not speak for ODFW, WDFW or IDFG; the last he heard was that they wanted to use any water over and above that needed to meet the elevation target of 1268 feet for flow. Christine Mallette observed that 170 Kcfs is an extremely low flow for McNary for this time of year; she said she would prefer to see the modeled flows next week exceeded, if possible. ODFW would prefer that the first priority for next week's operation be increased flow at McNary, and are willing to accept a later refill date at Grand Coulee as a consequence, she said.

One administrative point, said Fodrea – we will need a letter from NMFS to our regional director indicating that NMFS is OK with straying from the refill target. I understand, said Wagner; our position is a little different from that of USFWS and ODFW.

My preference would be that we will agree to exceed 170 Kcfs as a flow target, and will still attempt to fill 10 feet next week as well, said Fodrea. That sounds good to me, MacKay said. NMFS' preference would be to split the flow above 170 Kcfs between flow and refill, said Ross.

So where are we? McCarty asked. NMFS has proposed a balance between increased flow and increased refill, said Yoshinaka; the rest of the salmon managers would prefer to maintain the 1268-foot elevation ceiling at Grand Coulee, with any additional water going to flow. So where does that leave us? McCarty asked. I guess NMFS will need to make the call, Yoshinaka replied. Wagner said NMFS recommends splitting any additional volume above 170 Kcfs flow at McNary between refill and flow at this time; we can then revisit that operation next week. I'm reluctant to move refill too far into July, he said, given the fact that subyearlings are already showing up at Lower Granite and McNary – I would hate to have to drop flows even more significantly in July, to accelerate refill, he said.

Any potential to adjust the refill rate at Albeni Falls to help this situation? Ross asked. We look at that operation every day, and expect that project to refill some time in June, Henriksen replied. I don't think any adjustments we make at this point will have a great deal of impact on Grand Coulee refill, she said. I see – it will just backfill Grand Coulee this month, Ross said.

So to restate the NMFS recommendation, said Henriksen, I thought I heard you say that NMFS' desire is to maintain a minimum flow of 170 Kcfs at McNary; if flow at McNary is going to be significantly greater than 170 Kcfs, a portion of that water should also be devoted to refill. In other words, she said, we will maintain a minimum flow of 170 Kcfs at McNary, with a management call as to the ability to fill higher than 1268 feet by next week at Grand Coulee. That's correct, said Ross – our intent is to exceed both the 170 Kcfs flow target and the 1268-foot elevation target, apportioning the water between the two purposes.

If flows are such that neither target is being achieved, said MacKay, I would suggest that we reconvene next week to discuss the situation. It was so agreed. And again, if NMFS decides to recommend a significant delay to Grand Coulee refill, I will need a letter from you, said Fodrea.

VI. Need for Future TMT Meetings.

I just wanted to keep this item at the back of people's minds, said Henriksen; we have agreed to have a full TMT meeting next week, but after that, it will be a week-to-week decision. Wagner noted that his experience today was less than satisfactory; there were some decisions to be made, and face-to-face discussions are helpful, in that case. It may work again in the future, he said, but it could have worked better today. As long as it's a short agenda, without additions, a conference call may work in the future, Yoshinaka said. In some ways it was easier to follow today's meeting, because there was less paper-shuffling and side-conversations, said Bettin. So is there agreement that we will make this a week-to-week decision? McCarty asked. That works, Wagner replied.

VII. Next TMT Meeting Date.

The next full, face-to-face meeting of the Technical Management Team was set for Thursday, June 15 from 9 a.m. to noon at the Corps' Northwestern Division Headquarters. A Libby subgroup conference call was set for Monday, June 12 at 2 p.m. Meeting notes prepared by Jeff Kuechle, BPA contractor.

TMT ATTENDANCE LIST

JUNE 8, 2000

Scott Boyd	COE	503/808-3943
Cindy Henriksen	COE	503/808-3945
Cathy Hlebechuk	COE	503/808-3942
Kyle Martin	CRITFC	503/731-1314
Patricia McCarty	Facilitator	
Mike O'Bryant	Columbia Basin Bulletin	503/281-9102
Rudd Turner	COE	503/808-3935

On Phone:

Name	Affiliation	Phone
Jim Abbott	Canadian Member of Parliament	
Scott Bettin	BPA	
Elia Farrell	Columbia Basin Trust	
Kim Fodrea	Reclamation	
Tim Heizenrader	Enron	
Bob Hallock	USFWS	
Steve Hemstrom	Avista Utilities	
Dusica Jevremovich	FPC	
Jim Litchfield	Consultant (Montana)	
Ningjen Liu	Idaho Power	

Robyn MacKay	BPA	
Christine Mallette	ODFW	
Pat McGrane	Reclamation	
Brian Merotz	MFWP	
Kurt Miller	PGE	
Steve Pettit	IDFG	
Chris Ross	NMFS	
Craig Sprankle	Reclamation	
Glen Traeger	Avista Energy	
Paul Wagner	NMFS	
Steve Wallace	PacifiCorp	
Marv Yoshinaka	USFWS	

TECHNICAL MANAGEMENT TEAM

BOR: *Kim Fodrea\Pat McGrane*

NMFS: *Paul Wagner\Chris Ross* BPA: *Scott Bettin\Robyn MacKay*

USFWS: *Marv Yoshinaka\Bob Hallock\Susan Martin*

OR: *Christine Mallette \Chuck Tracy* WA: *Jim Nielsen* ID: *Ed Bowles\Steve Pettit*

MT: *Jim Litchfield* COE: *Cindy Henriksen\Rudd Turner*

COLUMBIA RIVER REGIONAL FORUM

TECHNICAL MANAGEMENT TEAM

RE: June 12, 2000 Meeting

FACILITATOR'S NOTES ON FUTURE ACTIONS

TECHNICAL MANAGEMENT TEAM

MEETING NOTES

June 12, 2000

CORPS OF ENGINEERS NORTHWESTERN DIVISION OFFICES – CUSTOM HOUSE

PORLAND, OREGON

DRAFT

I. Greeting and Introductions

The June 12 Technical Management Team conference call to discuss summer sturgeon, bull trout and salmon operations at Libby Dam, was chaired by Cindy Henriksen of COE. 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.

Henriksen welcomed everyone to the meeting, then led a round of introductions and a review of the agenda.

II. Libby Summer Operations (Continued).

Henriksen began by saying that she wanted to revisit water supply forecast today, and revisit bull trout operation, as well as revisiting the status of the sturgeon operation. By way of history, she said, we started the ramp-up for the sturgeon operation last Tuesday morning. By Friday at 6 a.m. we were releasing 9 Kcfs from Libby. There was a drowning last weekend below the dam, and local law enforcement they asked us to reduce Libby outflow to 4 Kcfs. We didn't do that right away, but we did reduce outflow to 7 Kcfs overnight on Friday, then ramped flows back up to 9 Kcfs on Saturday morning, Henriksen said.

As of this morning, Henriksen continued, we are releasing 25 Kcfs – full powerhouse capacity – from Libby as we agreed last week. Forebay elevation at the project was near 2411 at midnight last night, with inflow in the 35 Kcfs range – in other words, she said, the project is filling. The water supply forecast has now been recalculated; for the April-August period, it's 6.9 MAF, the same water supply forecast we saw in May and April. That's good news, said Bob Hallock.

Just before the meeting, we got a first-cut SSARR model run, Henriksen said. There are no significant changes. Last week the run showed the project at elevation 2420 by July 1. By July 31, we were showing that the project would be at elevation 2451; this week in the SSARR run that elevation has declined slightly, to elevation 2449.7. The SSARR is still running off a 6.4 MAF runoff? Chris Ross asked. I believe so, Henriksen replied; it may be running off a little less, in fact, because the July 31 elevation is less, despite the fact that the water supply forecast has increased.

Are we comfortable with our current strategy, given this information? Henriksen asked – it would be helpful if we had some input from the Fish and Wildlife Service's Helena office. I discussed this with them this morning, Hallock said; their feeling was that if the forecast came in lower, they would prefer a 6 Kcfs bull trout flow, rather than an 8 Kcfs flow. That's to benefit salmon? Jim Litchfield asked. Correct, Hallock replied; also, we thought we had already made a tradeoff for sturgeon.

I thought we had an agreement, at last week's conference call, on what the operation was going to be, Litchfield said – is that wrong? I said then that I couldn't speak for Helena, Hallock replied – I would suggest you call Larry Lockard directly at 406/758-6883.

How do we get a deal if we can't get the proper people in the room? Litchfield asked. I got a variance from Larry on the sturgeon operation to get us to that point, Hallock replied. Is that in writing, and can I see it? Litchfield asked. Yes, Hallock replied. I thought these discussions concerned endangered species – this all seems a little flippant to me, said Litchfield. This is the first time we've tried to coordinate all of these operations in season, Hallock replied. It just seems silly to take on Part A, without agreeing on Parts B and C, said Litchfield – I thought we were clear that the agreement to go forward with the sturgeon pulse was contingent on the other operations we agreed to with respect to the bull trout and salmon.

You said you do have agreement from Larry Lockard about the ramp-down rate – can you fax that to us? Henriksen asked. I'm looking for it, Hallock replied. If I can get that, I'll email it to the rest of the TMT membership, Henriksen said.

And you got a variance for this operation? Litchfield asked. Correct, Hallock replied – what it boils down to is the fact that we don't have enough water this year to do everything we would like to do for sturgeon, bull trout and salmon; we recognize that these operations are probably less than optimal, for all three species, but this is the best we think we can do.

Is there any flexibility on the 19-day duration for the sturgeon operation? Henriksen asked. No, we still have wild fish spawning in the river, Hallock replied. However, if we were doing this operation to benefit wild fish, we would do a pulse, followed by an incubation flow, Litchfield said. The sturgeon recovery team did away with the pulse, Hallock replied.

Is there any flexibility to shorten the 19-day full powerhouse period, if we see that fish have moved? Henriksen asked. No – three of the hatchery females haven't even spawned yet, and we still have wild fish spawning as well, Hallock replied. It will be another 14 days, give or take, before the other three females' offspring are ready to release.

We could make this a win-win for bull trout as well if we could have a gradual ramp-down from the sturgeon operation, followed by a summer flow that covers the riffle area, said Marotz – that water would then continue downstream, and help salmon as well. My concern about equal flow for sturgeon and salmon, said Henriksen, is that sturgeon flow is in June only, and salmon flow is in July and August. Yet there is still natural flow coming downstream in July and August, although no one seems to recognize that fact.

It doesn't make sense to me to reduce bull trout flows to 6 Kcfs, said Litchfield. I would also like to remind people that

the bull trout population below Libby is not expected to persist for 100 years, because of the fact that it has been split off from the other bull trout populations, said Marotz – I would hate to see bull trout flows go to 6 Kcfs.

It's a balancing act – in the absence of a BiOp, the base flow for bull trout is 4 Kcfs, Hallock replied. I'm concerned that the guy behind the door is saying balance flows for salmon and sturgeon, and he's also saying 6 Kcfs for bull trout, said Litchfield. We agreed there would be a 19-day flow for sturgeon; that water is then gone,. If we take the flows down to 6 Kcfs for bull trout, there will only be a certain amount of water left for salmon, down to the ending elevation for Libby. If we reduce flows to 8 Kcfs, as we had planned, then there is some additional water for both salmon and bull trout. It sounds to me like Larry Lockard has made this decision to benefit salmon, which is not his area of expertise, at the expense of bull trout, which is his area of expertise – that's what I don't understand, Litchfield said, and it's very frustrating that he is unwilling to participate in these calls so that we can discuss it with him directly.

I'm just the guy carrying the mail, Hallock replied – it's a less-than-optimal situation for all species, and we're trying to do triage on all three species. So Larry thought 6 Kcfs wouldn't be the end of the world for bull trout? Chris Ross asked. That's correct, Hallock replied – they got along on 4 Kcfs for a long time, and while 9 Kcfs is optimal, 6 Kcfs is better than 4 Kcfs.

The other thing I'm hearing is that 19 days, 6 Kcfs and then salmon flow is the plan that was hatched long ago, and it's not negotiable, said Litchfield. We had a meeting last week and developed a different plan, but that appears now to have been ignored – I thought we had a compromise agreement, and now it doesn't look like we have that. I guess that means that Montana needs to decide now what our next step is. What I reported was what we agreed to last week, and now we're going to have to update people, Marotz agreed.

The direct consequence of the 19-day sturgeon operation followed by a 6 Kcfs bull trout flow is reservoir elevations, said Ross – would you rather have the 6 Kcfs and more refill, or 8 Kcfs and less refill? We agreed we would rather have 8 Kcfs last week, because of our concern about bull trout impacts, Litchfield said – is that correct, Brian? Yes, Marotz replied – we want to avoid the double peak, and it would be less of an impact to go up from 8 Kcfs than from 6 Kcfs.

The forecast we have now means we are going to meet 200 Kcfs at McNary for one week, maximum, said Ross. I'm thinking that this year, the 8 Kcfs would be preferable, because it will help both bull trout and salmon in July. There was no change in forecast, so I thought this would be a very short meeting, he said – I'm willing to live with 8 Kcfs, if the Fish and Wildlife Service is. I can call the Helena gang, and see what they say, said Hallock – I'll call them right now.

What I'm hearing is a strong recommendation that we maintain 8 Kcfs for bull trout, said Henriksen. We also need to keep in mind that the Libby/Arrow swap has a number of benefits for the Canadians as well as for us, said Ross; however, the more we release now, the less likely that swap will become. My understanding is that a flat flow during the summer will give us the best elevation to encourage that swap, Litchfield said. The straight 8 Kcfs out will require a maximum swap, involving a higher volume than has been agreed to in the past, Ross observed.

I'll tell Larry Lockard that NMFS is willing to live with shaping this year, and we'll see what flexibility there may be on the 19-day duration, said Hallock. And you'll send us the email on ramp-down rates? Henriksen asked. Yes, Hallock replied.

One thing that keeps coming up every year is the tiered flow approach and how it was calculated, said Marotz – since it's a tiered flow at Bonners Ferry, how do you plan how much of that flow is the responsibility of Libby, so that the operators can plan ahead? I would appreciate some modeling help from the Corps, so that these questions are easier to answer in the future, Marotz said – I think it's a resolvable problem, but what we've done so far isn't working. If you have a target at Bonners Ferry, and you release the same amount from Libby, you get entirely different results. Again, I think we can resolve it, if not for this year, for next – the idea would be to yield the same biological results, while reducing pressure to refill, Marotz said. We have had people considering these options for awhile, so the Corps would like to work with Montana on that question, Henriksen said.

Did I hear that there may be some flexibility on the 19 days? Henriksen said. Possibly, said Hallock – Jim was making

me angry earlier, so I didn't want to talk about that. I'll carry the mail, he said. And again, there is a great deal of interest in the Libby/Arrow swap for this year, Henriksen said.

It sounds then, as though we want to see a minimum flow of 8 Kcfs for bull trout during July, said Henriksen. I feel confident that that is a good operation, said Ross, but I should check with others at NMFS before agreeing absolutely. So it sounds as though the small group's consensus is that 8 Kcfs is the first priority, Henriksen said. I'll check with the Helena USFWS office to see if they feel that's doable, Hallock said.

With respect to our second priority, I think I heard that the Libby/Arrow swap is a higher priority than the sturgeon operation, Henriksen continued. I think we ought to do everything we can to maximize the possibility of a Libby/Arrow swap, said Litchfield. It is helpful that the new water supply forecast is higher than what's shown in the SSARR, said Ross. Canada is thinking about this, said Hallock; I got a call from B.C. Hydro this morning, asking us to shorten the 19 days to put more water into Libby, and also to lower the bull trout flows – in other words, there is already some interest in a 2000 Libby/Arrow swap, on Canada's part.

After a few minutes of additional conversation, Henriksen re-stated the small group's operational priorities as follows: 1) the sturgeon operation, with the understanding that there may be some room for negotiation on the 19-day duration, 2) the 8 Kcfs bull trout flow, 3) filling Libby as full as possible to encourage the Libby/Arrow swap.

We also need to talk about how to accomplish these tasks, said Henriksen; do we want to continue with these Monday conference calls? There was general agreement that this would be helpful, at least in terms of getting status reports and discussing future strategy; it was agreed to schedule another conference call next Monday, June 19, at 2 p.m. I'll set that up, Henriksen said. She asked Hallock to get someone from Missoula, Helena or Kalispell USFWS offices to call into next week's call.

In response to a question from Ross, Henriksen said the current SSARR run shows Grand Coulee filling around July 4-5. With that, the meeting was adjourned. Notes prepared by Jeff Kuechle, BPA contractor.

TMT CONFERENCE CALL PARTICIPANT LIST

JUNE 12, 2000

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Dick Cassidy	COE	503/808-3938
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On Phone:

Name	Affiliation	Phone

Scott Bettin	BPA	
Bob Hallock	USFWS	
Jeff Laufle	COE	
Christine Mallette	ODFW	
Brian Marotz	Montana FWP	

TECHNICAL MANAGEMENT TEAM

BOR: *Kim Fodrea\Pat McGrane*

NMFS: *Paul Wagner\Chris Ross* BPA: *Scott Bettin\Robyn MacKay*

USFWS: *Marv Yoshinaka\Bob Hallock\Susan Martin*

OR: *Christine Mallette \Chuck Tracy* WA: *Jim Nielsen* ID: *Ed Bowles\Steve Pettit*

MT: *Jim Litchfield* COE: *Cindy Henriksen\Rudd Turner\Dick Cassidy*

COLUMBIA RIVER REGIONAL FORUM

TECHNICAL MANAGEMENT TEAM

RE: June 15, 2000 Meeting

FACILITATOR'S NOTES ON FUTURE ACTIONS

Facilitator: Donna Silverberg

The following is a list of items the Technical Management Team (TMT) discussed at its last meeting that will require future action or discussion.

Minutes & Facilitator's Notes:

Comments on the prior meeting minutes of the June 8th and the June 12th conference calls are due Friday, 6/16/2000 by 4 p.m. Minutes are available for review on the TMT web page. The COE has been trying to get notes up by Monday mid-day, so please check them in preparation for the next meeting.

Hanford Reach Update

Joe Lukas reported on the prior two weeks activities at the Reach. Details of the flows and sampling are on the TMT web page. Index seining is anticipated to end on June 20th.

Report on June 6 Dworshak meeting with Idaho and Nez Perce Tribe

Greg Haller, from the Nez Perce Tribe, gave an update on the discussions regarding a waiver and described the process used to issue a waiver. Conditions for a waiver remain the same as noted in a spring TMT meeting. At the next meeting TMT will consider modeling data with the aim of selecting a proposed operation. If the operation requires a waiver it will be submitted to Idaho and the Nez Perce for review. All parties acknowledged the good work they have done together so far, and their interest in continuing the cooperation and collaborative effort.

Cool Water Effects on Migrating Adults

Dr. Dale McCullough, from CRITFC, presented information on the effects of water temperatures on migrating juveniles and adult. Generally, above 15 degrees C, disease and mortality rates begin to rise, and migration blockage appears at about 21 degrees C, with adults having less tolerance than juveniles. The text of a study of this issue is available on the CRITFC web page.

Water Temperature Modeling Results

Mary Lou Soscia, from the EPA, began with a summary of the issue. Temperature is important in restoration, and Dworshak is the primary tool to affect temperature in the lower Snake. EPA is looking for the replication of a natural hydrograph as closely as possible, a balance between temperature and spill benefits to juvenile and adult migration, and as few violations of the Washington state standards as possible.

NMFS, EPA and CRITFC shared the subset of scenarios the subgroup is considering for flow augmentation in the lower Snake. Some of the information passed out was in error so the corrected version will be available on the TMT web page.

ACTION: Paul Wagner will provide the COE with the latest data and corrections and the COE will send it to all TMT members and post in on the web page.

ACTION: All members will review the information and scenarios to come up with a proposal at the next meeting.

ACTION: The COE and NMFS will work together to do modeling on temperature scenarios in preparation for the next meeting.

Update on Snails at Milner

Marv Yoshinaka reported that the monitoring was not done because the snail experts were unavailable at the time. The COE noted that the absence of monitoring information will present difficulties in considering their needs in the future, and the reservoir level will be rising soon.

ACTION: Marv will check with the Boise office and work with the BOR regarding possible consultation to protect and evaluate.

Libby Sturgeon Flows Update

The subgroup met by conference call on Monday, June 12th; another call is scheduled for Monday, June 19th at 2 p.m. A flow of 25Kcfs was reached by Monday, June 12th and will continue for the scheduled 19 days. The hatchery release occurred as planned, and there will be more as spawning occurs. The priorities remain the same and discussions will continue.

ACTION: Rudd Turner will distribute the Hallock-Lockhard memo on bull trout operations to TMT.

ACTION: Jim Litchfield will distribute information on optimum flows for bull trout to TMT.

Update: End of Fish Spill on Lower Snake River

Salmon managers see spring conditions continuing with flows remaining around 80Kcfs; spilling will continue through June 20th. Flows, temperature and fish numbers will be monitored closely and the salmon managers will contact the COE if a change in action is needed.

Update: Start Transport and End Spill at McNary

The flows are still over 200Kcfs so the salmon managers recommend holding off transporting. The issue will be discussed at the next FPAC meeting.

ACTION: Transport will be on the agenda for the next TMT meeting.

Review of Current System Operations

BOR reported that it will continue talking with Idaho Power about shaping water from the upper Snake. It will begin

delivery on June 23rd and the water should show up at Lower Granite by July 1st, as should the water from Payette.

Spill and TDG

Dick Cassidy reviewed spill operations and gas levels. The COE is assessing and revising daily. The COE and NMFS will meet in a few weeks to go over the process the COE uses.

Complete details on operations, spills and fish migration can be found on the TMT web page.

New Operations Requests

SOR 2000-24 is being implemented.

IT Meeting: July 12th, presentation by Mike Schneider from WES on SYSTDG model

All TMT members are invited to attend; they will receive information on the meeting from NMFS.

Next meeting June 22, 2000, 9 a.m. – 12 noon

TECHNICAL MANAGEMENT TEAM

MEETING NOTES

June 15, 2000

CORPS OF ENGINEERS NORTHWESTERN DIVISION OFFICES – CUSTOM HOUSE

PORLAND, OREGON

DRAFT

I. Greeting and Introductions

The June 15 Technical Management Team meeting, held at the Custom House in Portland, Oregon, was chaired by Cindy Henriksen of COE 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.

Silverberg welcomed everyone to the meeting, then led a round of introductions and a review of the agenda.

2. Review of June 1, June 8 and June 12 TMT Minutes.

No changes were made to the minutes from the June 1, June 8 and June 12 TMT meetings; Silverberg asked that any additional comments be submitted to Henriksen by close of business Friday, June 16.

3. Hanford Reach Update.

Joe Lukas reported that, for the week ending June 4, flows at Priest Rapids Dam averaged 129 Kcfs. A total of 56 random sites were monitored; field personnel sampled a total of five juvenile fall chinook. A total of 870 fish were sampled at the index sites, average fork length 48.5 mm. Lukas said there was a similar range of flows for the week ending June 11; during this week, a total of 45 random sites were monitored, with zero fish sampled. Researchers sampled 202 fish at the index sites, average fork length 50 + mm.

Lukas said the Hanford Reach fish protection operation will continue through at least June 19; fish spill in the Mid-Columbia ended on June 15. We'll look at the index seining on Monday, said Lukas, and if we see less than 194 fish, the program will end on June 20. In response to a question, he said the total fish sampled in 2000 is about 300 less than last year; total mortality is about 40 fish more.

4. Report on June 6 Dworshak Meeting with Idaho and Nez Perce Tribe.

Greg Haller of the Nez Perce Tribe said that, while the Nez Perce do not participate in the Regional Forum process, he agreed to attend today's TMT meeting in order to facilitate information exchange. As you're aware, he said, the State of Idaho and the Nez Perce have developed a framework for granting a short-term activity exemption for Dworshak operations in 2000; as part of that framework, they want Dworshak to be at full pool (elevation 1600) by June 30 and no lower than elevation 1537 on August 31, to ensure that some cool water is available for release during the fall period. Idaho and the Nez Perce would also like full pool to be maintained at Dworshak until July 31. The framework further stipulates that any water releases from Dworshak will be approved by the state and tribe; any request for an exception to these rules must be made in writing to the state and tribe, and written scientific support must be provided. No exceptions (requests for Dworshak releases prior to July 31) can be presented to the Regional Forum until they have been approved by the State of Idaho and the Nez Perce Tribe, Haller said.

These rules are in place primarily because of fall chinook issues in the Clearwater River, said Haller; there are both juvenile and adult issues involved. We got together in Lewiston a couple of weeks ago to discuss this; several operational issues were discussed, and we did identify several areas where compromise is possible, Haller said. However, any compromises will have to be worked out through the process I mentioned, he said. One compromise is when the releases can begin; because we will have a full pool this year, he said, it should be possible to meet the needs of all of the parties involved.

Paul Wagner said the model outputs, discussed at previous TMT meetings, are now available; a total of 28 scenarios have been modeled. Wagner distributed copies of the results of these model runs. So you presented the framework at the meeting in Lewiston, and you're in the process of working out the operational issues? Silverberg asked. We presented our concerns, Haller replied; we're still trying to work out the operational issues, and plan to meet again in the next two weeks. Wagner said TMT has been asked to develop an operational proposal, a desired operation to meet everyone's needs if a waiver is desired. The time-frame to do that isn't today, he said; we haven't even had an opportunity to review some of the model runs. However, at the July 6 TMT meeting in Lewiston, I hope we can present that scenario.

I do have a few administrative questions, said Henriksen – are there handouts that show the parameters the Nez Perce and Idaho have laid out, so that we're sure we understand them? There is no agreement per se, Haller replied; this is the framework the state and tribe have developed to deal with Clean Water Act issues. I didn't plan on handing this out, he said, but I could forward it, if there is interest – the framework has been out for several months, and I think the TMT received it in March.

So what we received several months ago is the framework, and the June 6 meeting just acknowledged that the framework exists? Henriksen asked. We had the meeting to try to figure out how, within that policy context, we could make a decision in the most positive way possible, said Mary Lou Soscia.

From the Corps' standpoint, said Rudd Turner, the Corps is responsible for the operation of Dworshak. How that project is operated is not a state decision, and it's not a tribal decision. The current TMT spreadsheet lays out the planned operation of that project; what it shows is 14 Kcfs outflow, beginning July 14, in order to achieve elevation 1520 at Dworshak by the end of August. If Idaho, the Nez Perce or NMFS want to see anything other operation, we need to talk about that through TMT, Turner said.

As I said, we don't participate in the Regional Forum process, said Haller – if you want a waiver, then this is the process we're going to use. We're waiting to see a proposal, he said. The operation I described will not require a waiver, Turner replied; this is the proposed operation at this time.

Paul Wagner has proposed a TMT meeting in Lewiston, said Silverberg – I guess we need to talk about that. In response to a clarifying question from Jim Litchfield, Haller said no waiver has been granted to date in 2000. And the Corps' assumption is that 14 Kcfs outflow from Dworshak will not exceed 110% TDG? Litchfield said. Correct, Turner replied.

In response to another question from Litchfield, Soscia said the June 6 meeting in Lewiston was an attempt to reach a collaborative solution to this issue; there may be an opportunity even without a waiver to find an operation that will balance out all of the issues and allow all of the parties concerned to reach a mutually-acceptable agreement. That's one of the reasons I'm here, said Haller – we want to hear what you have to offer. By the end of the June 6 meeting, we were very close to identifying an operation that would meet everyone's needs. We would like the TMT to develop a proposal, if a waiver is needed, you can run it through our process; if no waiver is needed, we would still like to talk about what you're proposing, Haller said.

Henriksen said she is a little confused, after hearing Haller's description of the process. The spreadsheet describes one potential operation, she said; I wouldn't characterize it as a proposal, but just a potential scenario. Also, she said, I wasn't aware that the TMT's purpose was to make proposals for approval by the state. The idea was to encourage a spirit of cooperation, Haller said. If the proposal requires a waiver, Wagner said, the state and tribe have laid out some fairly specific parameters under which the waiver would be granted. Haller added that the tribe will object if Dworshak is taken down to elevation 1520 feet at the end of August.

Turner replied that such an operation would not contravene any laws that he is aware of; the TMT's role is to make these difficult choices. I'm not saying that we're just going to do what we want, despite your desires; in this particular water year, however, it may not be possible to meet everyone's desires, said Turner. We want a collaborative process, he said, but collaboration works both ways.

The problem is that, every year, the desires of the upriver stakeholders are generally disregarded, said Haller. I think it's a very positive sign that Greg is here, said Silverberg; I also think the fact that the group has expressed a willingness to work with Idaho and the Nez Perce is a positive thing. I just wanted to acknowledge that, she said, because it is a positive development.

Bettin observed that TMT can't change the 1520-foot end-of-August elevation at Dworshak; it is imposed by the NMFS Biological Opinion. Haller replied that it is his hope that the new Biological Opinion will provide some relief on this issue; in short, he said, there may be some room for compromise. You indicated that July 15 is the earliest date that the subyearlings in the Clearwater will reach sufficient size to tolerate cold release temperatures from Dworshak, said Jim Nielsen; what is your criteria? Size, Haller replied – we want to see an average fork length of 80 mm. Notes from previous years indicate that the Clearwater fish were at an average fork length of 85 mm by July 9, Nielsen said; we have taken that criteria into account in previous years. Last year, we saw cold water dumped on those fish before they reached the target length, Haller said; 1985 was just one year. Yoshinaka suggested that additional coordination between the Nez Perce and the other salmon managers would be helpful on this issue.

Henriksen said she hopes it will be possible to reach a mutually-acceptable scenario; she offered the help of RCC staff to further refine the modeled scenarios, and reduce the 28 scenarios to a more manageable number.

What is the expectation from the TMT? Turner asked – do you want us to come up with a summer operating proposal for Dworshak by next week? That would be helpful, Haller replied.

5. Cool Water Effects on Migrating Adults.

Dale McCullough of CRITFC briefed the TMT on the benefits of cool water for returning adults. He went through a series of overheads, touching on his background, the process through which state and federal standards for temperature are set, the report he has developed on this topic (available from www.critfc.org), the problem itself (high temperatures cause migration blockages and stress on the fish). He noted that migration blockages have been consistently noted at about 21 degrees C – that appears to be the threshold that inhibits migration, and causes the fish to retreat to seek cool water refugia in the Lower Columbia. Peak water temperatures have been recorded in the Lower Snake in the 25-degree+ C range during the summer months; there are often long periods – a month or more -- during the peak migration

of fall chinook when water temperatures exceed 21 degrees in the Snake. The problem is that the fish are expending energy throughout these delays; even if they eventually do reach the spawning grounds, they may not have enough energy reserves left to find mates, excavate redds, spawn and guard their redds. Every adult is precious, said McCullough, which is why this issue is of such concern to the tribes.

Higher temperature increases respiration and energy expenditure, he continued; studies have shown that 10 degrees, for example, is the optimum holding temperature for sockeye. Adult salmon are even more sensitive to temperature than juveniles; studies have shown that adults can tolerate temperatures about 2 degrees C. less than juveniles. Studies have also shown that 25 degrees C. is a frequently-lethal threshold for adults, and mortality levels of up to 50% have been seen for adults held at 21-22 degrees C. Because of sedimentation and loss of woody debris, cold-water refugia are no longer as common as they were; it is becoming increasingly difficult for fall chinook to find them, particularly in the John Day system, McCullough said.

The effects of high water temperature on gametes are also extremely detrimental, McCullough continued; sublethal effects have been largely overlooked since the 1972 National Academy of Sciences report. All of the research indicates that adults holding for long periods in high temperatures have less-viable gametes; they are often infertile, and their eggs show many subsequent developmental problems.

Disease problems also increase with temperature, McCullough said; the higher the temperatures, the faster fish die. During recent temperature-related fish kills at McNary Dam, it has been estimated that up to 94% of the mortalities died as a result of *columnaris* infection. Studies show that mortality begins to increase at about 15 degrees C, and increases exponentially as temperatures increase, said McCullough. Above 20 degrees C, the disease problem becomes even more acute.

In response to a question from Scott Bettin, McCullough said it is presumed that, historically, the migrating adults exhibited a similar pattern of behavior when temperatures in the Snake River were high. However, there is evidence that the high temperatures are persisting into late September now, with the reservoirs in place; this was never the case in the past. The reservoir-caused thermal inertia problem also means that diel temperature fluctuation is less, he said – you no longer see temperatures cool off significantly at night.

6. Water Temperature Modeling Results.

Kyle Martin said that, at the June 6 meeting in Lewiston, the 28 scenarios were narrowed down somewhat. What the Nez Perce and Idaho are proposing is that Dworshak remain full through July 31; on August 1, outflow would be ramped up to 14 Kcfs, with a nice, natural recession on the hydrograph through September. NMFS is suggesting an operation that would ramp up as high as 20 Kcfs during July, which would require a waiver, he said. Between those two, he said, I modeled my own alternative, CRITFC 1, drawn from the natural hydrograph. Under this scenario, flows would peak during the first two weeks in August, with full pool until mid-July, 5 Kcfs outflow from Dworshak in the third week of July, up to 14 Kcfs during the first two weeks of August, then a gradual rampdown in later July and September. The CRITFC alternative would yield a nice, normative recession through late August, he said; the NMFS scenario keeps flows higher through July and early August, followed by a sharper recession in flows.

CRITFC Scenario 2 shifts the peak outflow from Dworshak about one week earlier, Martin said; there is a little more benefit for juveniles during the summer period, and less for returning adults in September. The Nez Perce and Idaho are proposing that the reservoir be kept full until July 31, followed by 14 Kcfs out during the entire month of August, followed by a normative recession in flow. Basically, said Martin, we have the two book-end proposals – Idaho/Nez Perce and NMFS – and two scenarios that fall somewhere in the middle.

Nielsen observed that the original goal of this operation was to increase flow at Lower Granite. Has that been modeled? It can be derived from the changing outputs from Dworshak, Wagner replied. We can show that in our model, said Nancy Yun.

In response to a question from Chris Ross, Haller reiterated that there is some flexibility, within the Nez Perce/Idaho plan, to address unexpected temperature spikes without requiring a waiver. It is cool and rainy in Lewiston this morning, Haller said. Let's hope it stays that way, said Ross.

Soscia said this issue is very important for EPA; as Dale McCullough said, water temperature is a very important indicator of ecosystem health. There isn't much we can do about it, given the current configuration of the hydrosystem, except these cold-water releases from Dworshak. We will continue to make our modeling resources available to help bring the best available science to bear on this problem, she said. We would like to see the closest possible condition to a natural hydrograph and temperature regime, she said; we would also like to see a balance between temperature and spill benefits for both juvenile and adult migrants, and we would like to see as few violations as possible to the biologically-based Washington state standard.

Soscia shared several scenarios run recently by John Yearsley of the EPA modeling staff; she emphasized that EPA's goal is to be as collaborative as possible in making this decision. Turner noted that Yearsley's model results are available via the TMT website.

Wagner said NMFS had submitted 15 scenarios in all, only eight of which were significantly different from one another. He went briefly through these scenarios, beginning with Scenario 13, which shows what would happen, from a temperature standpoint, if there was no augmentation from Dworshak. He noted that what this shows is that temperatures, not surprisingly, would rise until September, when natural cooling kicks in.

Wagner noted that, optimally, the majority of the cooler Dworshak releases should be concentrated in August; unfortunately, the fish are migrating in July, so it doesn't make sense, biologically, to delay the Dworshak releases until August.

Under the Nez Perce/Idaho proposal, under which Dworshak remains full until July 31, the problem is that you would provide no benefit to the summer fish during July, Wagner said; these fish are migrating in significant numbers beginning in the second week in July. He then touched on Billy Connor's suggested operation, under which Dworshak would be ramped up gradually beginning the second week of July.

These are essentially the three scenarios that were discussed at the June 6 meeting, Wagner said; obviously, the first scenario just shows what would happen if there was no augmentation from Dworshak. After the Lewiston meeting, the discussion concentrated on whether there was some acceptable middle ground; we were asked to develop another proposal. What we came up with was Scenario 17, Wagner said; it is similar to the TMT/NMFS proposal, in that it reduces Dworshak discharge from 14 Kcfs to 9 Kcfs during August, while releasing more water in July. Releases from Brownlee also decrease; temperatures are maintained at 20 degrees C. at Lower Granite all through August. This is a scenario that provides higher flows and temperature benefits all the way through the third week in September, he said, based on 1998 temperature data, the third-highest temperature year on record. It borrows from August and moves some of the Dworshak water into September, in essence, he said.

Scenario 18 shows what would happen if some of the water was moved from August into July, Wagner said; what it shows is that this particular scenario would likely be inadequate to bring about the desired temperature reduction – you really have to put the flow on if you want to keep temperatures from spiking sharply upward. July is the worst time for fish to be there, he said, but they're there, so what do we do?

That's all I have, said Wagner – at the June 6 meeting, it was requested that the TMT develop a recommended scenario by July 6, so this is the information we now have in hand. I think this is a good first step, said Haller – we don't expect a perfect scenario, just one that takes into account the goals of all of the stakeholders, and tries to do the best it can to meet them.

It was agreed that the other TMT participants will review this information, with an eye toward developing a proposal at the next TMT meeting. Haller asked the TMT to contact him to set up the July 6 TMT meeting in Lewiston; it was so agreed.

7. Update on Snails at Milner.

Marve Yoshinaka said he had checked with the Fish and Wildlife Service's Boise office, and found that the snail monitoring information requested at a previous TMT meeting isn't currently available. Will we get any information on

what happened this year? Martin asked. I don't think there will be information on the exact impacts on snails from this year's operation, Yoshinaka replied. There won't be much impetus, from a TMT standpoint, to protect the snails if there is no monitoring going on, Turner observed. We hope that Reclamation will be willing to conduct this monitoring in the future, Yoshinaka replied; my understanding is that the Reclamation snail expert retired this year. I'll check with USFWS' Boise office about future monitoring plans, Yoshinaka said. Has Reclamation considered re-initiating consultation with the Fish and Wildlife Service, since current measures obviously aren't adequate to protect the species? Nielsen asked. I think that would be a Fish and Wildlife Service call, Kim Fodrea replied. The problem is that we would need to identify another source of water for the snails, said Yoshinaka; all I can say is that we're aware of this problem, and are attempting to solve it.

8. Libby Sturgeon Flows Update.

Turner said there was a conference call on Monday with the TMT subgroup coordinating Libby operations; this group will be meeting weekly for the near future. So far, he said, we have agreed on ramp-up and discharge from Libby; we hit 25 Kcfs outflow from Libby on Monday. I received a call from Bob Hallock yesterday expressing concern about the 49-degree water temperature at the hatchery, Turner said; RCC talked to the project yesterday, and they reported that they have been drawing water from the top 50 feet of the reservoir. At RCC request, the project is now installing two sets of bulkheads that will allow them to draw water from the top 30 feet, which should increase the water temperature by a degree or two, Turner said. The project is currently releasing 25 Kcfs, full powerhouse capacity; that operation is scheduled to continue for about 19 days. On Monday, the subgroup agreed that the first priority is to continue the sturgeon operation, although the duration may be the subject of further discussion. We also agreed to a bull trout flow of 8 Kcfs; the third priority agreed to was to do everything possible to encourage a 2000 Libby/Arrow swap.

Bob Hallock said researchers haven't been able to recapture any of the released sturgeon larvae yet; they were still picking up eggs from the wild spawning as of Monday. A heavy debris load is hampering the researchers' efforts currently, said Scott Bettin; it is hoped that this situation will ease soon.

What's the release schedule at the hatchery, beyond Monday's release? Turner asked. I don't know, at this point, Hallock replied – there are still three females that need to spawn. It will be at least 14 days, he said, the fry will likely be released after flows drop. What does a normal female produce? Jim Litchfield asked. About 100,000 eggs, Hallock replied. Did you find Lockhart's memo on the bull trout flow? Litchfield asked. Yes – I sent it to Rudd Turner, Hallock replied. Turner said he will forward this memo to TMT.

9. End of Fish Spill on Lower Snake River.

The Corps understands that this issue was discussed by FPAC at Tuesday's meeting, said Turner; June 20 is the planning date for stopping spill at the Lower Snake projects. Yoshinaka said the salmon managers discussed this issue on Tuesday; the bottom line is that they would like an opportunity to discuss it further at their June 20 meeting. Turner said the Corps intends to stop spill on June 20; it's not an easy call this year, he said, but it looks as though, based on fish passage and anticipated flow conditions, that spill should be stopped soon. I would suggest that we continue to monitor conditions closely, he said, and see whether they warrant a cessation of spill prior to June 20. We will do so, said Yoshinaka, and will convene a conference call if conditions begin to deteriorate.

10. Start of Transportation and End of Fish Spill at McNary.

At McNary, said Yoshinaka, again, flows are coming up, and the salmon managers' recommendation is not to begin transport yet – we will discuss the situation again on Tuesday. Turner said that the BiOp guidance is to stop spill when subyearling chinook migrants outnumber yearling migrants, and also to take into account when springlike conditions are over. Turner noted that, a couple of weeks ago, flows of 220 Kcfs were considered inadequate to provide good

passage conditions. Now you're saying that springlike conditions persist under similar or lower flows, so we would appreciate a little more consistency in your descriptions, he said. So the salmon managers will talk on Tuesday, and we will revisit both the spill and transport issues at next week's TMT meeting? Silverberg asked. Correct, Yoshinaka replied.

11. Review of Current System Conditions.

Fodrea said Reclamation has been talking to Idaho Power about the feasibility of shaping some of the Upper Snake water at Brownlee; there is no resolution on this issue yet, she said, but we're continuing to work on it. It looks as though the salmon augmentation releases will begin in late June, and will show up in the lower river about July 1. Outflow from the Boise system is currently being held back, but will begin no later than June 23, because of concerns about high outflow. She said it would please a lot of people in Idaho if those releases could begin today; it is likely that this would result in a reduction in Snake River flow of less than 1 Kcfs during July and August.

12. New System Operational Requests.

On June 13, the salmon managers submitted SOR 2000-24, covering operations at Dworshak Dam. This SOR, supported by ODFW, USFWS, WDFW, NMFS, IDFG and CRITFC, requests the following specific operations:

- Delay the refill of Dworshak Dam until June 30 by immediately increasing outflow from the project. Refill at an even rate from now until the end of the month.

Yoshinaka spent a few minutes going through the contents of this SOR, the full text of which is available via the Fish Passage Center web site. He noted that, according to the current spreadsheet, Dworshak will refill by June 21; the goal of this SOR is to increase flow in the Lower Snake between now and the end of the month, while still refilling Dworshak by the date shown in the BiOp.

Turner said Dworshak outflow is now 4.7 Kcfs. An RCC teletype to increase discharge to this level was sent on Tuesday of this week, a couple of hours before receiving your SOR. We are watching the situation closely, he said, but with inflow of 8 Kcfs yesterday, we think we will be full by June 30. Inflow is expected to decrease to be equal to outflow about the time the project approaches full. The goal is to provide as smooth an operation as possible through the end of June. In other words, he said, we are implementing this SOR.

13. Recommended Operations.

Turner said next week's system operations are expected to closely mirror the operations shown in the spreadsheet.

14. Other.

Silverberg said a major presentation on the SYSTDG model is scheduled for the July 12 IT meeting; she asked whether the TMT wanted to schedule a presentation at that meeting as well. It was agreed that it is premature to make a decision on this issue at this time; however, the TMT members may want to attend this meeting.

15. Next TMT Meeting Date.

The next Technical Management Team meeting was set for Thursday, June 22, from 9 a.m. to noon at the Corps' Northwestern Division headquarters. Meeting notes prepared by Jeff Kuechle, BPA contractor.

TMT ATTENDANCE LIST

JUNE 15, 2000

Ruth Abney	COE	503/808-3939
Scott Bettin	BPA	503/230-4573
Dick Cassidy	COE	503/808-3938
Kim Fodrea	Reclamation	503/872-2802
Greg Haller	Nez Perce Tribe	
Tim Heizenrader	Enron	503/464-7462
Jim Litchfield	Consultant – Montana	503/222-9480
Robyn MacKay	BPA	503/230-3385
Christine Mallette	ODFW	503/872-5252 x 5352
Kyle Martin	CRITFC	503/731-1314
Kevin Nordt	Enron/PGE	503/464-7240
Mike O'Bryant	Columbia Basin Bulletin	503/281-9102
Amy Rider	BPA	
Chris Ross	NMFS	
Donna Silverberg	Facilitator	
Mary Lou Soscia	EPA	
Rudd Turner	COE	503/808-3935
Maria Van Houten	Enron	503/464-7961
Paul Wagner	NMFS	503/231-2316

Marv Yoshinaka	USFWS	
Nancy Yun	COE	

On Phone:

Name	Affiliation	Phone
David Baker	American Electric Power	
Margaret Filardo	Fish Passage Center	
Steve Hemstrom	Avista Utilities	
Bob Hallock	USFWS	
Cindy Henriksen	COE	
Ningjen Liu	Idaho Power	
Joe Lukas	Grant PUD	
Pat McGrane	Reclamation	
Jim Nielsen	WDFW	
Kevin Nordt	PGE	
Mike	El Paso Merchant Energy	

TECHNICAL MANAGEMENT TEAM

BOR: Kim Fodrea\Pat McGrane

NMFS: Paul Wagner\Chris Ross BPA: Scott Bettin\Robyn MacKay

USFWS: Marv Yoshinaka\Bob Hallock\Susan Martin

OR: Christine Mallette \Chuck Tracy WA: Jim Nielsen ID: Ed Bowles\Steve Pettit

MT: Jim Litchfield COE: Cindy Henriksen\Rudd Turner\Dick Cassidy

COLUMBIA RIVER REGIONAL FORUM

TECHNICAL MANAGEMENT TEAM

RE: June 22, 2000 Meeting

FACILITATOR'S NOTES ON FUTURE ACTIONS

Facilitator: Patricia McCarty

The following is a list of items the Technical Management Team (TMT) discussed at its last meeting that will require future action or discussion.

Minutes & Facilitators Notes:

Comments or changes on the prior meeting minutes are due Friday 6/23 by 5 p.m. Paul Wagner noted changes that need to be made regarding names and other issues. See minutes for exact changes.

Hanford Reach Update

Joe Lukas reported on last week's activities at the Reach. He noted that this Friday's policy call might be the last. Listen for details at his report next week.

Libby Sturgeon Flow Update

Marv reported that monitoring continues and that the subgroup formed on this issue will continue to track flows. The latest agreement is that the current Libby operation will continue for a total of 17 days (at 25 kcfs), then ramp down to 8 kcfs for bull trout needs (models are on the TMT homepage). It was noted that the subgroup believes this will be the best operation for all three species (sturgeon, bull trout and salmon). Any and all updated biological information will help the subgroup and TMT make any changes to

the agreed upon operation.

FYI-Cindy noted that there is a possibility that Libby will not be at full powerhouse outfall by the next TMT.

Water Temperature Modeling

ACTIONS: 1) COE will run NP3 after Kyle Martin forwards values to Rudd Turner this afternoon. COE will also add an additional week in September unless the model is too uncertain.

2) NP2 can be deleted since it is no longer an option and has erroneous data in the model. 3) Paul Wagner will provide Rudd with updated numbers for BRN.

4) Salmon managers will develop scenarios for resident and native fish. They hope to have a recommendation regarding DWR for the next TMT meeting. The intent is to have all parties informed and working together towards a selected option regarding summer flows by the July 6 meeting.

Reservoir Conditions

Jim Litchfield said that Montana would like TMT to discuss summer operations at Hungry Horse in order to both minimize the effects at the project while meeting the needs of salmon. The group thought a subgroup would be useful on this issue.

ACTION: Kim Fodrea will convene a conference call Friday 6/23 at 10 am including: NMFS (Chris Ross), USFWS (Marv will find someone), Montana (Brian Marotz) and Jim Litchfield), BPA (Robyn MacKay), and COE (Kathy Hlebechuk). The group will report back at the next TMT meeting.

Gas/Spill

Dick Cassidy focused the group on BON's CWMW line on the gas graph. He noted that it has been surprisingly difficult to manage the gas levels at Camas this year. COE is continuing to stay on top of the issue and has arranged for a joint group of gas and fish managers to make Portland district site visits to see if there are field observations that might aid management of the gas levels. The field trip will occur on Monday June 26, 2000. Dick will report any findings the group may make at the next TMT meeting.

Spill for fish passage ended at the four collector dams and fish collection began at McNary on 6/20. COE coordinated this with NMFS, BPA, and USFWS, who worked with co-managers. The first barge is transporting fish from McNary today (6/22/00).

Fish Curves

Thanks were expressed to the Fish Passage Center for putting the requested fish curves on their website. TMT appreciated being able to review the data in the bell curve format.

System Requests and Operations

There was no formal request made. Projects will continue towards refill.

Other

Chum Salmon: At the request of Salmon Managers, BPA and NMFS will draft a proposal regarding Ives Island for review at FPAC.

Gorley Springs: WA was looking to purchase flooded lands that have become spawning areas. No package has been developed at this point, but a TMT update will be made as this progresses.

Next TMT Meeting: 6/29/00 9 a.m.-12:00 p.m.

Agenda items:

- Temperature Modeling/Summer Flows Update
- Libby Sturgeon Flow Update

- Hungry Horse Subgroup Update
- Gas Site Visit Report

Facilitator notes submitted by Donna Silverberg 6/22/00

TECHNICAL MANAGEMENT TEAM

MEETING NOTES

June 22, 2000

CORPS OF ENGINEERS NORTHWESTERN DIVISION OFFICES – CUSTOM HOUSE

PORLAND, OREGON

DRAFT

I. Greeting and Introductions

The June 22 Technical Management Team meeting, held at the Custom House in Portland, Oregon, was chaired by Cindy Henriksen of COE and facilitated by Patricia McCarty. 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.

McCarty welcomed everyone to the meeting, then led a round of introductions and a review of the agenda.

II. Review of Minutes from June 15 TMT Meeting.

A few minor comments were offered on the minutes from last meeting; McCarty asked that any additional comments be submitted to Henriksen by close of business Friday, June 23.

III. Hanford Reach Update.

Lukas reported that the Hanford Reach fish protection operation is continuing; for the week ending June 18, average flows at Priest Rapids were 130 Kcfs. We had some forced spill next week, he said, due to higher-than expected flows. The Mid-Columbia fish spill program ended June 14. We're now well past the period of high stranding susceptibility, Lukas said; last week, we sampled 62 random sites, and found zero fish. Index seining exceeded the special operation's ending criteria, which is why the fish protection program is still continuing, he said; the average size of the fish sampled was 54 mm. The new ending criteria for June 26 is less than 207 fish sampled in the index seining; Lukas added; there will be at least one more Hanford Reach conference call tomorrow morning.

IV. Libby Sturgeon Flows Update.

Yoshinaka said he had talked to Bob Hallock this morning; all of the hatchery fish have now spawned, with a group of larvae to be released today. Other larvae will be released toward the end of the rampdown period. They are capturing some eggs in the river, so some natural spawning is occurring, Yoshinaka said. They're also tracking a couple of other sturgeon over a gravel area near Bonners Ferry; they are also potential spawners.

Henriksen said the Corps has been updating its model runs weekly, based on input from the River Forecast Center; the Libby operations subgroup has been meeting to discuss the operation and look at potential adjustments. Originally, we were modeling a volume of 6.4 MAF for the April-August period, she said; the RFC is now running off a volume of 6 MAF. Either 6 MAF or 6.4 MAF, however, remains in the realm of possibility. The subgroup is now talking about 17

days, rather than 19 days, for the duration of the sturgeon operation; we're also pretty much in agreement on the 8 Kcfs bull trout flow in July, Henriksen said. Given a runoff volume of 6 MAF, that leaves Libby at a maximum elevation of about 2446 feet on July 31, she said. The group will be discussing this operation again on Monday. Rudd Turner noted that Monday will be 15 days into the sturgeon release, so the group will probably make a final decision on the duration at that time. In response to a question from Jim Litchfield, Turner added that a 17-day duration was agreed to during last Tuesday's call.

Did you talk about a 6 Kcfs bull trout flow? Yoshinaka asked. Yes, Litchfield replied; we decided to stay at 8 Kcfs.

The group discussed the various scenarios the Corps is modeling; Turner noted that one of the runs shows a 14-day duration, to see where that would leave the reservoir elevation in the context of encouraging a Libby/Arrow swap. None of the scenarios results in an elevation higher than 2450 feet, however, and at this point, it appears unlikely that a Libby/Arrow swap will occur in 2000.

The bottom line is that there is a good possibility that Libby will no longer be at full powerhouse outflow by next Thursday's TMT meeting, Henriksen said; the decision to change that operation will likely be made during Monday's conference call.

In response to a question from Christine Mallette, Litchfield said the bull trout flow is constant because that water will flow downstream to Grand Coulee, where it will be stored for later release for salmon. The group then spent a few minutes discussing the differences between the various forecasts that are currently available.

V. Water Temperature Modeling Results.

As you will recall, said Turner, we started this modeling exercise in February; the Corps did some additional COLTEMP runs based on last Thursday's discussion. We modeled a total of six scenarios, including some new ones, and have also distributed the updated EPA report which Mary Lou Soscia referenced at last week's meeting.

Turner spent a few minutes going through these various model runs; he noted that, in terms of temperatures, this appears to be closer to an average, rather than a warm or cool, water year. Turner said Scenario 17 was the compromise scenario; Scenario NPT-2 releases a lot of water from Dworshak – 20 Kcfs – in July, keeping temperatures cool initially; temperatures then increase steadily as Dworshak outflow declines until natural cooling begins to kick in during early September. The initial cooling is dramatic, he said, but the temperature rebound in August is equally dramatic.

Martin noted that Scenario NPT-2, as currently modeled, is incorrect; he also described Scenario NPT-3, which ramps up Dworshak earlier in July, then runs 14 Kcfs out through much of July and August. The version of NPT-2 which was modeled was taken from the earlier version of the EPA report. Kyle Marton said that NPT-2 is no longer under consideration, so there is no need to model the updated version.

When do we need to make a decision on this? McCarty asked. We talked about that among the salmon managers, said Yoshinaka, and we need some additional time before making a recommendation. It may or may not be possible to do that before the July 6 meeting in Lewiston, he said; we need to base our decision on what's best for resident and anadromous fish. So the salmon managers are still looking at all six or seven scenarios, and plan on making a recommendation by when – next TMT? Henriksen asked. We hope so, Yoshinaka replied – we hoped to have that today, but again, we need to talk about it some more. Do you need any additional Corps modeling? Henriksen asked. It sounds as though there is a desire to model NPT-3, Turner said – the Corps can do that, and post each of the runs on the TMT web site.

The group discussed the validity of the current model runs, given the fact that actual Brownlee operations are somewhat different than the operation assumed for modeling purposes; Wagner ventured the opinion that the difference between actual and assumed operations probably isn't great enough to justify re-running all of the scenarios. Rudd has offered to re-run the scenarios, said Robyn MacKay; wouldn't that make more sense? After a few minutes of discussion, Turner said the Corps will re-run the scenarios, using Brownlee operational information that will be provided by Wagner.

So there will only be one Brownlee operation in the scenarios? Henriksen asked. True, Wagner replied. And how many Dworshak operational scenarios are there, now? Henriksen asked. Six, Wagner replied. Can we narrow those down somewhat? Henriksen asked – looking at these model runs, the temperature differences between them aren't great, and I think fewer scenarios would make the selection process simpler. I think, given what Marv said, that we ought to continue to model all six, Donna Silverberg suggested. Ultimately, it was agreed that the Corps will run the new NPT-3 scenario, drop NPT-2 from the runs since it is no longer under consideration, and post all six scenarios on the TMT web site.

The group discussed the history behind and intent of the 2000 Idaho/Nez Perce waiver conditions, for the purposes of clarification. Mallette asked whether the Corps has the ability to extend the model for one more week into mid-September. I would have to check on that, to see what meteorological information is available, Turner replied. That would be helpful to the salmon managers' discussion, Yoshinaka said.

In response to a question from Litchfield, Wagner said the goal of the Lewiston TMT meeting will be to reach a collaborative decision on summer operations at Dworshak, with the input of the Nez Perce Tribe and Idaho. It sounds then, as though, by July 6, we need a pretty good feel for what we're going to be recommending, Henriksen said. The salmon managers will be meeting on Tuesday, to look at the most recent information in an effort to whittle the scenarios down to a more manageable number? Correct, Wagner said – hopefully, by next week's TMT meeting, we will have them whittled down to a single recommendation.

In response to a question from Ningjen Liu, Wagner said he will call him later today to be sure the Brownlee operational assumptions to be used in the model are correct.

VI. Snake River Summer Reservoir Operations.

This item was covered during the previous agenda item.

VII. Review of Current System Conditions.

Henriksen noted that Libby operations have already been discussed; in general, she said, most projects continue to refill. Kim Fodrea said inflows to Hungry Horse and have been very high lately; the project is now four feet from full, and there is some concern about filling and having to spill. For that reason, Reclamation plans to delay refill somewhat, to avoid spill. We also want to minimize the double peak at Columbia Falls this year, she said. How strongly do the salmon managers feel about actually touching full, she asked – if we stop about a foot from full, we can provide a smoother river operation. I don't think that would be a concern, at this point, Wagner said.

We're also continuing to discuss IRC operations, Fodrea said; however, it now appears that NMFS and the salmon managers are going to recommend the full 20-foot draft from Libby this year. We have some time, said Litchfield; I think we may want to explore some other operations that will come closer to the IRC operation and minimize impacts around Libby and Hungry Horse, while still positioning the projects to provide salmon flows. I need to discuss Reclamation's scenarios with Brian Marotz and the Montana biologists, before giving you a definitive recommendation, Litchfield said. In response to a question from Litchfield, Fodrea said Reclamation hadn't planned to install flashboards around Hungry Horse this year, but could do so, if that's the TMT recommendation. Yoshinaka said he has circulated Reclamation's Montana proposal to Fish and Wildlife Service personnel in Montana; he is waiting for their response. It was agreed to discuss this issue further at next week's TMT meeting, once Litchfield has an opportunity to discuss Reclamation's scenarios with others in Montana. In response to a question, Henriksen said it may be possible to model some additional Montana scenarios for Litchfield later next week.

It was agreed that a TMT subgroup, similar to the sturgeon operations subgroup, be convened to develop a recommended Hungry Horse operational scenario for this summer. Fodrea said she will coordinate this conference call, and report back to the full TMT at a future meeting.

Fodrea said Grand Coulee is filling slowly; it is at elevation 1277 this morning. The goal is to maintain reasonable flows at McNary, and fill Grand Coulee by the late on the fourth or early on the fifth of July. The Upper Snake projects are going to begin releasing salmon flow augmentation water some time this weekend, she added. Henriksen said Brownlee

and Dworshak are essentially full and passing inflow.

What about snails? Henriksen asked. I checked for funding or for someone that was available to go out into the field to check on the snails, but I was unsuccessful, Fodrea replied. I did find out that we have a funding agreement, with the Fish and Wildlife Service, to hire Boise State University to do a two-year snail life-history evaluation, she said; however, the area they will be studying is outside our area of concern. In response to a question from Yoshinaka, Fodrea said her understanding is that Reclamation is responsible for snail monitoring above Milner, while Idaho Power is responsible for monitoring below Milner. So IPC may have some snail information? Yoshinaka asked. Correct-- I know they've written a conservation plan, and Dianne Cazier is their point of contact on snails, Fodrea replied.

With respect to spill and TDG, Dick Cassidy distributed a summary of the current data; he noted that fish spill has now stopped at the Lower Snake projects. Bonneville is the main focus this week, he said; on Friday, we had a discussion with NMFS about raising the spill level at Bonneville, because we were seeing TDG levels of less than 115% at the Camas/Washougal monitoring station. Accordingly, we increased spill at Bonneville from 100 Kcfs to 110 Kcfs; we subsequently saw TDG in excess of 115% at Camas/Washougal and in excess of 120% at Warrendale, closer to the project. In response, we reduced spill to 105 Kcfs at Bonneville, but are still seeing TDG levels of 115.1% at Camas/Washougal. .

The group spent a few minutes discussing this information; Cassidy said the Corps and representatives from NMFS, the Washington Department of Ecology and EPA will be touring the monitoring sites next week and discussing this information. We'll get all of these heads together, he said, and see if we can develop a scenario that explains why this is happening. In response to a question, Cassidy said he will report the outcome of these discussions at a future TMT meeting.

Turner said fish spill at the four collector projects – Lower Granite, Little Goose, Lower Monumental and McNary – ended on June 20; on that same day, at 1100 hours, McNary project began collecting juvenile fish for transport. The first barge will be loaded this morning for transit downriver. Turner added that these operations were coordinated with NMFS, BPA, and Marv Yoshinaka for the salmon managers.

With respect to current fish passage information, Wagner said yearling chinook counts are declining; the run is pretty much done at Little Goose, Lower Monumental and Rock Island, and is also almost over at McNary. Have we reached the 95% passage point for the season? Henriksen asked. The DART estimate is that 99% of the predicted spring/summer chinook run has passed Lower Granite, and 98% at McNary, Wagner replied. DART also estimates that 100% of the steelhead run has now passed both Lower Granite and McNary, he added, so that run is also pretty much over, according to the predictive tools. However, some steelhead are still being seen at Lower Granite, he said. Same thing for sockeye, he said, although, again, we're still seeing a few sockeye at Lower Granite.

Then we have the subyearlings, Wagner said; this is the next outmigration on the way. We're seeing up to 23,000 per day at Lower Granite, currently, which is a lot of subyearling chinook, compared to historic counts, for this point in the season. In 1993, for example, 1,000 subyearlings was the peak daily index count. In other words, he said, the Lower Snake fall chinook run is on the increase. Daily indices at McNary have been up to 259,000, he added; many of these fish are from Ringold Hatchery and the Hanford Reach. In response to a question from Henriksen, Wagner said the current estimate is that only about 10% of the subyearling run has passed, at this point in the season; we expect passage to continue through the summer, with the bulk of these fish passing McNary by August 1. Turner noted that the cumulative passage graphs on the Fish Passage Center web page show this year's outmigrations in the middle of the historic distribution. This year's high fish numbers relative to historic passage levels is not apparent on the graphs. Wagner stated that the historic data are being scaled to the projected 2000 total numbers of fish. Thus the graph is strictly a run timing depiction, and does not provide an indication of the strength of this year's run compared to previous years. Scott Bettin asked if the historic cumulative averages could be plotted so this comparison could be displayed. Wagner said he would check into it.

VIII. New System Operational Requests.

No new SORs were submitted prior to today's meeting.

IX. Recommended Operations.

Henriksen said individual project operations were covered in a previous agenda item; again, she said, most projects are full and passing inflow, or are still continuing to fill, and that is driving current operations in the system.

X. Other.

A. Chum Salmon – Ives Island and Gorley Springs Habitat Modifications. Scott Bettin said he had asked Jim Nielsen and the salmon managers to discuss potential habitat modifications at Ives Island at the Tuesday FPAC conference call. We discussed that Tuesday at FPAC, said Nielsen; the agreement there was that, until we have a definitive proposal from BPA, there isn't much point in discussing the issue in detail. That's contrary to what I recall, said Bettin; my understanding was that you didn't want me to develop a proposal until we had an opportunity to discuss it together. If you want me to come up with a proposal, however, I will do so, Bettin said. It was so agreed. You will work with NMFS to develop a proposal that will then be presented to FPAC? McCarty asked. Correct, Bettin replied.

What about Gorley Springs? Bettin asked. WDFW is working to identify some parcels of land around Gorley Springs, in an effort to repair the damage done to the spawning area in the recent spring flood. I don't think our Vancouver office has a specific proposal yet, however, Nielsen said -- it is unlikely that anything will be done this year. Fish returning this year will likely be trapped and spawned in the hatchery, he added. I'll try to get some more information, and will report back to the TMT at next week's meeting, Nielsen said.

XI. Next TMT Meeting Date and Agenda Items.

The next meeting of the Technical Management Team was set for Thursday, June 29, from 9 a.m. to noon at the Corps' Northwestern Division headquarters. There is a possibility that this meeting will become a conference call; Henriksen said she will send out an email notification to that effect, if the salmon managers do not have a proposal on Snake River summer operations ready for discussion. Meeting notes prepared by Jeff Kuechle, BPA contractor.

TMT ATTENDANCE LIST

JUNE 22, 2000

Scott Boyd	COE	503/808-3943
Ken Dragoon	PacifiCorp	
Kim Fodrea	Reclamation	
Tim Heizenrader	Enron	
Cindy Henriksen	COE	503/808-3945
Jim Litchfield	Consultant (Montana)	
Robyn MacKay	BPA	
Christine Mallette	ODFW	
Kyle Martin	CRITFC	
Patricia McCarty	Facilitator	
Amy Meyer	BPA	
Chris Ross	NMFS	

Donna Silverberg	Facilitator	
Rudd Turner	COE	503/808-3935
Paul Wagner	NMFS	
Marv Yoshinaka	NMFS	

On Phone:

Name	Affiliation	Phone
Steve Hemstrom	Avista Utilities	
Ningjen Liu	Idaho Power	208 -388-2255.
Joe Lukas	Grant PUD	
Kurt Miller	PGE	
Jim Nielsen	WDFW	
Steve Pettit	IDFG	
Glen Traeger	Avista Energy	

TECHNICAL MANAGEMENT TEAM

BOR: Kim Fodrea\Pat McGrane

NMFS: Paul Wagner\Chris Ross BPA: Scott Bettin\Robyn MacKay

USFWS: Marv Yoshinaka\Bob Hallock\Susan Martin

OR: Christine Mallette \Chuck Tracy WA: Jim Nielsen ID: Ed Bowles\Steve Pettit

MT: Jim Litchfield COE: Cindy Henriksen\Rudd Turner\Dick Cassidy

COLUMBIA RIVER REGIONAL FORUM

TECHNICAL MANAGEMENT TEAM

MEETING NOTES

June 26, 2000 (1000 – 1100 hours)

Morning Conference Call

**CORPS OF ENGINEERS NORTHWESTERN DIVISION OFFICES – CUSTOM HOUSE
PORTLAND, OREGON**

DRAFT

I. Greeting and Introductions

The June 26, 2000 (1000 – 1100 hours) Technical Management Team conference call, held at the Custom House in Portland, Oregon, was chaired by Rudd Turner of COE. The purpose of the call was to discuss Grand Coulee operations. 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 Turner at 503/808-3935.

Turner welcomed everyone to the meeting, then led a round of introductions.

In Attendance:

Rudd Turner (COE)

Robyn MacKay (BPA)

Scott Bettin (BPA) Scott Boyd (COE)

Kim Fodrea (BOR) Cathy Hlebechuk (COE)

Paul Wagner (NMFS) Marv Yoshinaka (USFWS)

Chris Ross (NMFS)

Ron Boyce (ODFW)

II. Grand Coulee Operations.

Turner explained that the reason for this morning's call is that the Corps received a request from Reclamation last Friday to consider some options with respect to Grand Coulee refill. Reclamation indicated that they had heard some interest in possibly not refilling Grand Coulee over July 4-5, either not refilling at all to elevation 1290 or delaying refill until later in July, Turner said, due to falling flow forecasts in the Columbia and Snake Rivers. Reclamation was concerned that TMT had not agreed upon such an operational change, and that the group had not received any recent SORs on Columbia River operations, Turner said. According to the current TMT spreadsheet, Grand Coulee will refill by July 5, but current runoff and flow data raise some serious concerns about the impact of continuing with that operation on flows in the lower river, hence this call.

I was asked by NMFS to allow a two-foot shortfall in Grand Coulee refill on July 5, said Kim Fodrea; we have discussed the possibility of delaying refill at TMT, but have not yet developed a specific recommendation. This dates back to the early discussions of Grand Coulee operations earlier this month, said Paul Wagner; you will recall that we have made a series of decisions to maintain higher flows at McNary at the expense of later refill at Grand Coulee. Most recently, we discussed both refilling later, or possibly not quite achieving refill at all, he said. My understanding of the TMT minutes from last week is that that decision wasn't made; beginning this week, flows could be down in the 165 Kcfs range at McNary as we fill the last few feet in Grand Coulee. I said no; we don't want flows of 165 Kcfs in order to achieve refill, given the number of fish arriving at McNary right now, Wagner said. My reading of our discussions of this topic so far is that refill is secondary to flow, at this point – 165 Kcfs simply isn't acceptable, given the current status of the migration.

What was the discussion of this item at TMT last week? Ron Boyce asked. It wasn't really discussed, said Wagner; there was no SOR, and the expectation, given what was shown in the spreadsheet, was that McNary flows would be in the 190 Kcfs range. However, flows fell faster than anticipated, and on Friday, Reclamation became uncomfortable with the fact that we hadn't explicitly discussed what should be the priority if this occurred. Their read of the BiOp is that the TMT needs to make a recommendation, if refill at Grand Coulee is to be deferred or not occur at all, Wagner said.

As I said earlier, the U.S. Fish and Wildlife Service is willing to defer Grand Coulee refill until a later date in July, said Yoshinaka. If we hold flows at 175 Kcfs, what would be the refill date? Boyce asked. It's really difficult to say, at this point, Robyn MacKay replied – Snake River flows are falling much faster than expected. We could probably refill at any point; it just depends how low you want flows to go at McNary. In reply to a question, MacKay said current Snake River flows are 40 Kcfs and dropping, despite current high temperatures – there appears to be no snowpack left in the Snake, she said. I expect to see flows drop further, into the 30s, later this week, MacKay added.

So the situation is that both Columbia and Snake River flows are down, and we don't want Columbia flows to drop any further, given the current status of the migration, said Boyce. Again, what would be the refill date if we maintain Columbia flows at 175 Kcfs? I don't have a good handle on that today, said MacKay – they'll need to drop lower than they are right now if you want to refill. 180 Kcfs is out of the question; if you want to drop them to 160 Kcfs, you would probably have a good shot at refill within the next couple of weeks.

It's a shaping question, said Wagner – do we want to reduce lower river flows now, so that we have more water available later in the summer? Essentially, we need to decide whether there is value in achieving complete refill at Grand Coulee during this water year.

What's the planned operation, if we don't make a decision today? Boyce asked. To target Grand Coulee refill to elevation 1290 on July 5, said Fodrea. Which means we would need to cut McNary flow back to 145 Kcfs-150 Kcfs in order to achieve that objective, added MacKay. I think we need a little more information if we're going to be asked to choose between refill or higher flows, said Boyce – how low would flows need to go, exactly, in order to achieve refill by a given date; also, if we choose to keep flows at a higher level, where will that leave the project elevation in July?

First, I think we need to come to agreement about whether or not the low flows necessary to refill are acceptable, said Ross. Cathy Hlebechuk noted that Hells Canyon discharge is expected to increase later this week, but will drop again over the weekend. So we might be able to refill Grand Coulee by July 5 if we maintain a McNary flow of 152 Kcfs this week, said MacKay.

How does the migration look this week, in terms of remaining subyearlings and yearlings? Boyce asked. Wild tagged fall chinook numbers are increasing at Lower Granite, said Ross; those fish have been seen at McNary this week as well. The hatchery fall chinook are also present at Lower Granite in substantial numbers. What about McNary/Hanford indices? Boyce asked. We saw indices of 250,000+ at McNary last week, Wagner replied. That jumped up over the weekend – McNary collected over 1 million fish in three days, said Turner. There were daily index counts of nearly 700,000 over the weekend, and nearly 600,000 yesterday, said Wagner – 2.5 million in the last 17 days, so we're seeing huge numbers, currently, and I just don't see a sharp drop in flows as being consistent with the TMT's management direction so far this year. We thought we had a balance between flow and refill, he said, but now that doesn't look like the balance has held.

It would be helpful to know what a flow of 175 Kcfs would do to refill, said Boyce; I'm not at a point where I want to foreclose on the possibility of refill, but I think we do need to make an adjustment to the planned operation.

So can we say, for the purposes of today's meeting, that refill by July 5 is no longer the priority, and that TMT will discuss this information and make a recommendation on Thursday, said Fodrea? There was no disagreement to this statement. Fodrea reminded the TMT that 1280 is the draft limit at Grand Coulee this summer; Boyce replied that 1280 is a planning elevation, and may be revisited, depending on the flow situation in a given year.

If we're agreeing not to refill Grand Coulee on July 5, what is the operation we're agreeing to? Boyce asked. We're agreeing not to refill on July 5; the details of the weekly operation will be made at TMT on Thursday, Fodrea replied. I'm hearing you don't want to drop flows that drastically, she said. Can you do some model runs showing whether – and when – Grand Coulee might refill, given a flow this week of 175 Kcfs? Yoshinaka asked.

What is the planned operation through Thursday? Boyce asked. We can shoot for a week-average flow of 175 Kcfs, MacKay replied – flows would be higher than 175 Kcfs through the week, then lower over the weekend. Will that jeopardize refill at Grand Coulee? Turner asked. Not necessarily, if we target something like 150 Kcfs next week at McNary, MacKay replied. We will also know whether the northern basin will begin to melt off when the high pressure system hits it tomorrow, she added.

I would target 175 Kcfs this week, with the understanding that refill at Grand Coulee is still important, said Boyce. Hlebechuk noted that the RFC has switched to its specified flow model this week, which means they're assuming that the snowmelt is essentially over in the northern basin.

Wagner noted that the total run is estimated at 8 million fish this year; we're at about 3.3 million currently, so I would say that 175 Kcfs is a minimum at McNary, said Wagner. What kind of flows are we going to see at McNary later in the summer, if we're already at 175 Kcfs? Boyce asked – it doesn't sound as though we'll be seeing any more weeks at 200 Kcfs. Have you heard about the potential for finding any available water from the Upper Columbia to help us out this year? No one has been too forthcoming, so far, said Wagner – it may be possible to find some later in July or in August. NMFS would target late July or early August for the release of any additional water, Ross added. Have the federal parties had any success in finding additional sources of water? Boyce asked. I know we're looking at additional Canadian water, MacKay replied, but I don't think it will be available this year. Oregon is looking at potential water in the Owyhee and other reservoirs on the Snake, because flows are dropping like a rock, said Boyce. Anyway, I concur with the 175 Kcfs, and let's discuss this further on Thursday, Boyce said. Hlebechuk added that there is still a chance for a Libby/Arrow swap this year; B.C. Hydro would like Arrow to be within two feet of full by the end of July, if that swap is to occur. In response to a question, she said Arrow is currently at elevation 1430.4 feet; full is 1444, and the boat ramps become inoperable at between 1437 and 1438 feet.

It sounds, then, as though we have our recommendation for today – to maintain a minimum week-average of 175 Kcfs at McNary, said Fodrea. I'm also hearing refill Grand Coulee to the extent possible, given that constraint, and that refill

by July 5 is no longer a priority, said Turner. And we'll make a decision about whether – and when – to refill Grand Coulee on Thursday, said Fodrea. It was observed that the spreadsheet needs to be updated to reflect this agreement; Turner said the Corps will develop a spreadsheet showing both what would happen to Grand Coulee elevations if flows are maintained at 175 Kcfs through July 5, and one showing the likely flows if Grand Coulee refill by the week ending July 16 is the target.

In response to a question from Fodrea, Boyce recommended that the Corps send an email, letting the full TMT membership know that the minutes of today's discussion are available via the TMT's webpage. With that, the conference call was adjourned.

TECHNICAL MANAGEMENT TEAM

BOR: *Kim Fodrea\Pat McGrane*

NMFS: *Paul Wagner\Chris Ross* BPA: *Scott Bettin\Robyn MacKay*

USFWS: *Marv Yoshinaka\Bob Hallock\Susan Martin*

OR: *Christine Mallette \Chuck Tracy* WA: *Jim Nielsen* ID: *Ed Bowles\Steve Pettit*

MT: *Jim Litchfield* COE: *Cindy Henriksen\Rudd Turner\Dick Cassidy*

COLUMBIA RIVER REGIONAL FORUM

TECHNICAL MANAGEMENT TEAM

MEETING NOTES

June 26, 2000 (1400 – 1500 hours)

Afternoon Conference Call

**CORPS OF ENGINEERS NORTHWESTERN DIVISION OFFICES – CUSTOM HOUSE
PORTLAND, OREGON**

DRAFT

I. Greeting and Introductions

The June 26, 2000 (1400 – 1500 hours) Technical Management Team conference call, held at the Customs House in Portland, Oregon, was chaired by Rudd Turner of COE. The purpose of the call was to discuss Libby operations. 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 Cindy Henriksen at 503/808-3945.

Turner welcomed everyone to the meeting, then led a round of introductions.

II. Libby Operations (Continued).

The purpose of today's conference call is to continue the coordination of the summer operation at Libby Dam, Turner began. We are now in the 15th day of the 25 Kcfs sturgeon flow from Libby, he said; we're on a track right now of continuing the sturgeon flow for 17 days, followed by five days of rampdown to 15 Kcfs, 13 Kcfs, 10 Kcfs, 9 Kcfs and 8 Kcfs. After that, the plan is to release a flat 8 Kcfs from Libby during July, followed by a flow level in August that will result in elevation 2439 feet on August 31 Turner said.

Turner asked Bob Hallock to provide an update on the biological side of the sturgeon operation. Two things, said Hallock – field personnel captured three larvae last week; also, they were still picking up eggs from natural spawning as late as June 21. Are there any more larvae to be released from the hatchery? Scott Bettin asked. There will be another batch, but the fish hadn't spawned as of Friday, so the larvae will be released after flows are ramped down, Hallock

replied.

So there will be no more releases from the hatchery prior to the rampdown? Turner asked. Correct, Hallock replied. Is natural spawning continuing? Turner asked. I believe so, said Hallock, again, they were still finding eggs as of June 21. Those eggs will be hatching, and the larvae swimming up, after the sturgeon flows end, he added.

What's the flow situation? Turner asked. We now have a preliminary SSARR run for the week, Cathy Hlebechuk replied; after seeing it, I've asked the River Forecast Center to look at Libby inflows again. They've now switched to what they call the specified flow model, which looks at trends, rather than snow lines; the inflow forecast is quite a bit different this week – actuals are closer to 30 Kcfs than the 38 Kcfs predicted.

Based on this inflow forecast, said Hlebechuk, if we continue the sturgeon flow for 17 days, then maintain 8 Kcfs outflow from Libby through August 31, we would be below elevation 2439 at the end of July. The RFC is going to put a little more water into the forecast, she said, but it may not be enough to get us over elevation 2439 on July 31. That's very different from last week's forecast, she said – it's about nine feet lower, in terms of July 31 elevation. Basically, what it means is that, if this forecast is accurate, we will be passing inflow from Libby during the month of August.

In response to a question, Hlebechuk said the new forecast predicts that, by July 15, inflow to Libby will be down to 22 Kcfs, about 4 Kcfs lower than previously predicted. How much did the volume change, in MAF? Ross asked. I don't have that, Hlebechuk replied.

What does this model run show for an August flow? Turner asked. Passing inflow – about 10 Kcfs, on average, Hlebechuk replied. How much will the additional water the RFC is going to put into the model increase the July 31 elevation? Turner asked. Maybe two feet – it's hard to say, Hlebechuk replied.

It's pretty tough to plan, given this forecast, Hallock observed. True, and the Libby-Arrow swap is uncertain, said Turner. Actually, the Canadians are very interested in a swap this year, said Hlebechuk – if they can get Arrow to within two feet of full, they will be willing to discuss it. Unfortunately, we won't have any water to swap from Libby, said Ross. Unless we reduce outflow, Christine Mallette observed.

Montana isn't on the phone today, but they have expressed interest, at previous meetings, in avoiding a double peak, said Turner. I guess it depends on when we want to see the water, said Ross. Releasing it earlier would help the Grand Coulee refill situation we discussed this morning, Turner said. It sounds as though the flat 8 Kcfs flow might be a good idea, said Ross; if it comes down the Kootenai, and is retained in Grand Coulee, then it can be reshaped to augment salmon flows later in July and August.

We had thought about talking to the Fish and Wildlife Service about cutting a day or two off the sturgeon flow, said Turner, but now I'm not sure that would make a lot of difference – the water is needed in the lower river now, to help refill Grand Coulee. As long as it's not being trapped in Kootenai Lake, said Ross. It's not – they're on free-flow, Scott Bettin replied.

The group spent a few minutes discussing Kootenai Lake operations; Hlebechuk observed that the lake's August 31 elevation is a result of an allowable lake level calculation; it may be higher than the current forecast depending on how the allowable lake elevation calculation comes out. The bottom line is that they're not going to be filling – Kootenai Lake is either going to pass inflow or draft a little in July and August, said Bettin.

It sounds, then, as though we're going to go with the currently-planned sturgeon flow duration and rampdown operation, said Ross. After a few minutes of additional discussion, Turner said it appears the new forecast has given the group pause; Hlebechuk said she will re-check the forecast to see if it's been updated. I'm not hearing a lot of interest in reducing the duration of the sturgeon flow, said Turner; there is still natural spawning occurring, and the Fish and Wildlife Service has said they would prefer at least 17 days of sturgeon flow. Cutting off the sturgeon flow now would give us two additional feet of storage on Libby, Hlebechuk observed. With an unspecified amount of take, said Hallock. Are there any objections to keeping the current 17-day duration of the sturgeon operation, then ramping Libby outflow down to 15 Kcfs on Thursday? Turner asked. That would put us at 8 Kcfs outflow on Monday, July 3. That's OK with NMFS, said Ross. Is NMFS also OK with passing inflow at Libby during the month of August? Hlebechuk asked.

That's the next question, said Ross – I'm not sure we're at that point yet.

In response to a question, Hallock said the Fish and Wildlife Service could live with a 6 Kcfs bull trout flow in July; it's not an optimal situation, he said, but it's better than the base bull trout flow of 4 Kcfs. Since the salmon could use the water in July this year, and it's going to be reshaped or passed through Grand Coulee, there's no reason not to maintain 8 Kcfs, said Ross – that would also help us avoid the double peak, as Montana would prefer.

I would say, then, that 8 Kcfs seems doable, said Ross – we need the water in July; it will provide benefit in both the upper basin and the lower river. Turner reported that the RFC had now revised its forecast to show a slight increase in Libby inflows; according to the revised forecast, Libby would be at elevation 2441 on July 31. And if went with 6 Kcfs, rather than 8 Kcfs, after the rampdown, we would be at about elevation 2443.5 feet on July 31? Ross asked. That's correct, was the reply. The group spent a few minutes discussing this information, relative to a Libby–Arrow swap. Prospects for a swap remain uncertain, and will depend on reservoir conditions at both Libby and Arrow as the summer progresses.

Do we want another conference call next week, to discuss the 6 Kcfs versus 8 Kcfs question? Turner asked. Ross observed that both Jim Litchfield and Brian Marotz had clearly stated, at a previous TMT meeting, that their priority is Kootenai River flows of 8 Kcfs over a slightly higher lake elevation.

The group discussed the possibility of holding another conference call on Friday afternoon, June 30. We'll make a decision at the regular TMT meeting this Thursday, Turner said – it sounds as though everyone could use some time to digest this new flow forecast. The bottom line is that, at this point, it sounds as though we're going to stick with the previously-agreed-to sturgeon operation, said Turner. With that, the call was adjourned.

TMT Conference Call Participants

June 26, 2000

Scott Bettin BPA (phone)

Scott Boyd COE

Bob Hallock USFWS (phone)

Cathy Hlebechuk COE

Jeff Laufle COE (phone)

Christine Mallette ODFW (phone)

Chris Ross NMFS (phone)

Rudd Turner COE

Marian Valentine COE (phone)

TECHNICAL MANAGEMENT TEAM

BOR: Kim Fodrea\Pat McGrane

NMFS: Paul Wagner\Chris Ross BPA: Scott Bettin\Robyn MacKay

USFWS: Marv Yoshinaka\Bob Hallock\Susan Martin

OR: Christine Mallette \Chuck Tracy WA: Jim Nielsen ID: Ed Bowles\Steve Pettit

MT: Jim Litchfield COE: Cindy Henriksen\Rudd Turner\Dick Cassidy

TECHNICAL MANAGEMENT TEAM

MEETING NOTES

June 29, 2000

**CORPS OF ENGINEERS NORTHWESTERN DIVISION OFFICES – CUSTOM HOUSE
PORTLAND, OREGON**

TMT Internet Homepage: <http://www.nwd-wc.usace.army.mil/tmt/>

DRAFT

FACILITATOR'S NOTES ON FUTURE ACTIONS

Facilitator: Patricia McCarty

The following is a list of items the Technical Management Team (TMT) discussed at its last meeting that will require future action or discussion.

Minutes & Facilitators Notes:

Minor changes were made on the minutes from the 6/22/00 meeting. Additional comments or changes on the minutes are due Friday 6/30 by 5 p.m.

Hanford Reach Update

Joe Lukas reported on last week's activities at the Reach. The index count exceeded end criteria and the program ended 6/26/00. This was his last report of the season. A seasonal summary will be posted on the web.

Libby Sturgeon Flow Update

Marv reported that monitoring will continue through the summer. Flows will drop as scheduled. The latest data shows inflows are lower than projected. An elevation of 2439 was projected for the end of August. With the current operation the elevation will reach a maximum of 2441 feet. The subgroup will have a conference call at 2 p.m. on Friday, 6/30/00.

Hungry Horse Subgroup Update

Kim Fodrea reported on last Friday's conference call. The group decided on operating goals. Refill was to be delayed until inflows got below 5Kcfs, and that happened Wednesday, the 28th. The current plan is to draft down to 3540, the full 20 feet. Discharge at 6Kcfs will continue until mid-Aug.

Power System Emergency Update

Scott Bettin summarized Monday's system emergency and the immediate actions taken. In a conference call on Monday, BPA, COE, BOR and NMFS developed a contingency plan, the contingency plan was implemented for a few hours Monday, and not again during the remainder of the week. The plan will be rescinded the morning of the 30th.

See minutes for details of changes to operations during the week. Scott warned that this situation could occur again at any time this summer. TMT's emergency protocols, contained in Appendix 2 of the Water Management Plan will be used as a starting point for future emergencies, with modifications to be made by the group to fit the situation. The COE confirmed that it will consult with TMT before issuing a teletype at the next emergency.

Snake River Water Temperature Modeling

Rudd shared the new modeling results. They are posted on the web. The extension into September was included as requested.

McNary Operations

McNary flows will continue at 175Kcfs as long as the elevation at Grand Coulee can achieve elevation 1280 feet, although that may diminish the refill rate at Grand Coulee. Paul confirmed that wild listed fish are part of the run, necessitating this flow level for McNary.

Reservoir Conditions

Grand Coulee is not refilling in order to meet flow objectives at McNary. Elevation is expected to be around 1280-1282 by Sunday, maybe. Flow augmentation has started from the upper Snake. See the TMT web page for project flow details.

Gas/Spill

Dick Cassidy reported on the continuing effort to reduce the elevated gas levels at the Camas monitoring station. The higher temperatures are contributing to the rising gas levels. A joint group of gas and fish managers made Portland district site visits as planned, and learned that the water temperature around the monitoring stations affect gas level readings, making them somewhat inaccurate under those conditions.

Fish Curves

Paul Wagner noted that because of the comparatively huge numbers of sub-yearling chinook, that run is the focus for management. The run is still well within the middle range.

System Requests and Operations

2000-C2: After consideration, no action was taken on this request. Refill of Grand Coulee by June 30, and refraining from pumping, were not considered feasible.

2000-NPT1 and 2000-25: After a lengthy discussion that produced several possible compromises, and resulted in two formal compromise proposals, no consensus was reached. Idaho requested that the issue be raised to IT. An IT conference call took place in the afternoon. With input from TMT members, IT settled on a Dworshak operation for June 30th through the next TMT meeting on July 6th. Dworshak outflow will be increased to 6.5 Kcfs on June 30th, and that flow level will be maintained until the TMT (or IT) changes it. At the July 6th meeting in Lapwai, ID, TMT will review river flow, water temperature and fish conditions with the goal of developing a summer operating plan for Dworshak that can be modified later in the season, if needed.

Next TMT Meeting: 7/6/00 9 a.m.-12:00 p.m., Lapwai, ID

A BPA plane will leave Portland at 7 a.m. for Lewiston. The number to call in will be the same one used for Portland TMT meetings. For details on travel and the meeting, contact Cindy Henriksen or Scott Bettin. Greg Haller has set up local site visits for members, time permitting.

Agenda items:

- Dworshak operations
- Cindy will draft an agenda for the meeting, so please get any suggestions or concerns to her by Wednesday the 5th.

I. Greeting and Introductions

The June 29 Technical Management Team meeting, held at the Custom House in Portland, Oregon, was chaired by Cindy Henriksen of COE and facilitated by Patricia McCarty. 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.

McCarty welcomed everyone to the meeting, then led a round of introductions and a review of the agenda.

II. Review of Minutes from June 22 TMT Meeting, Details of July 6 Meeting in Lewiston.

A few minor comments were offered on the minutes from last meeting; McCarty asked that any additional comments be submitted to Henriksen by close of business Friday, June 30.

Greg Haller said he has reserved the Bureau of Indian Affairs conference room in Lapwai, Idaho, for next week's TMT meeting. The meeting will begin at 9 a.m. Mountain Time. Haller noted that Lapwai is about a 25-minute drive, by highway, from Lewiston; however, he said, there is a shortcut, and I will send a map to Cindy.

III. Libby Sturgeon Flows Update.

Marv Yoshinaka said there isn't much happening on the sturgeon front, currently; field personnel collected eggs on June 22, and are continuing to sample a few larvae in the river. The U.S. Fish and Wildlife Service plans to continue monitoring throughout the summer, he added. Henriksen noted that Libby has now begun to ramp down from the 25 Kcfs sturgeon flow, and will be at 8 Kcfs outflow by Monday, July 3. Inflows to Libby are much lower than hoped or expected, she said; the current pool elevation is 2416 feet, with inflows of 26.7 Kcfs.

The Corps has been looking internally at how we're stacking up with the Libby IRCs this year, she said, although it's difficult to have a meaningful discussion of this topic without a representative from Montana present. The IRCs the Corps received in March showed an end of May IRC at Libby of elevation 2396. The actual elevation was 2397 feet, which is very consistent. The end-of-June IRC they gave us was 2440 feet at Libby; because inflows have dried up, however, current project elevation is only 2416 feet. Montana has agreed to the operation we've embarked on, said Henriksen, so we can only assume it is consistent with their expectations, given the current inflow situation. It was agreed to convene another Libby subgroup conference call tomorrow (June 30) at 2 p.m.

IV. Hanford Reach Update.

This will be the last Hanford update of the year, said Joe Lukas. He reported that, for the week ending June 25, average flow at Priest Rapids was 137 Kcfs; the June 19 index count was 324, high enough, said Lukas, that we kept the fish protection operation going another week. By June 26, the index count was down to 25 fish, well below the ending criteria; the program ended at midnight, June 26. We will be putting together a final report, detailing this year's operation and monitoring reports, Lukas added.

In response to a question, Lukas said a total of 711 subyearlings were sampled at the random sites this year, and that the number of mortalities was very similar to what was seen in 1999. So there were similar fish numbers this year, and slightly higher survivals? Scott Bettin asked. Maybe a little higher – I think the numbers will be pretty similar, Lukas replied.

IV. Hungry Horse Update.

Last Friday morning, said Kim Fodrea, there was a conference call between NMFS, Montana, Reclamation, BPA. During that call, she said, we agreed to delay Hungry Horse refill until inflows recede to 5 Kcfs, to avoid spill; we reached that inflow level yesterday. We also agreed to try to minimize the double peak below the project and at Columbia Falls this summer; in addition, we agreed to draft the full 20 feet, to elevation 3540, by August 31. The project will release 6 Kcfs beginning this weekend, an operation that is expected to continue until mid-August, at which point a smooth rampdown, to achieve elevation 3540 on August 31, will occur. This operation will be re-evaluated as we get into mid-August, she said; at this point, Hungry Horse is about two feet from full.

V. Power System Emergency Update.

Bettin reported that at about 2 p.m. on June 26, BPA discovered that it was not going to be able to meet load, and could not purchase enough power to make up the shortfall. We therefore invoked a power emergency (Level Yellow under the TMT's Emergency Operations Protocols), which lasted about six hours, Bettin said; the system returned to normal operations by 8 p.m. Monday. In terms of specific actions, said Bettin, we operated McNary units outside 1% peak efficiency for five hours, reduced the spill volume at Bonneville to 50 kcfs for two hours and at The Dalles to 30% for five hours; we also stored above MOP at Little Goose and brought that water out the next day, Bettin said. There were several hours of no spill at Ice Harbor early Tuesday; spill was turned back on promptly Tuesday morning.

We're out of the woods for the time being, he said, but this type of emergency remains a possibility any time in the next couple of months. Bettin added that if a more serious emergency occurs in the future, he will contact the TMT's emergency response team directly, by phone.

In response to a question from Christine Mallette, Bettin said Monday's emergency occurred because BPA couldn't purchase enough power to meet load; our options were either to back off spill or black out Portland, and we chose to back off spill, he said. Paul Wagner noted that, the RCC emergency protocol teletype should be changed so that operating BON outside 1% will move from the first priority to the seventh or eighth priority. In other words, said Henriksen, there is a request to change the list of contingencies in the TMT's Emergency Protocols; we will re-send the teletype today. If we get into this situation in the future, she said, the Corps will not issue the emergency response teletype to the projects without coordinating with the TMT membership.

VI. Snake River Water Temperature Modeling and Summer Flows.

Rudd Turner said the Corps had run or re-run Scenarios NPT-3, as well as all six of the scenarios discussed last week, and dropped NPT-2, following last week's TMT meeting. A projected summer operation at Brownlee was developed with NMFS last Friday, and it is used in each of the runs. All of the runs are available on the TMT website. Do we need to go over these? McCarty asked. Basically what they show is that if you delay releasing the cool water from Dworshak, you experience rapidly increasing temperatures in later July, when there are still large numbers of Snake River migrants present in the system, Wagner said. The issue basically centers on what we should do in July, he said – hold the water for release in August, or release it earlier, in an effort to get a handle on river temperatures before they are out of control. Basically what this shows is that if you release the Dworshak water early, you affect temperature early; if you release the water late, you affect temperatures later in the season, Wagner said.

VII. Current System Conditions.

Fodrea said Grand Coulee has been drafting slightly to meet the McNary flow target this week; by Monday, project elevation is expected to be at about 1280 feet. Forecasts have been optimistic lately, to say the least, so the elevation may be lower than that, she said. On the Upper Snake, flow augmentation has started; I'll bring in some information next week, she said. Ningjen Liu confirmed that flow augmentation from the Upper Snake started last week; we're releasing 1.5 Kcfs from Milner, 600 cfs from the Payette and 280 cfs from the Boise system, he said. Currently, we are drafting Brownlee, although we still expect to refill over July 4 weekend by reducing outflow to about 9 Kcfs, Liu said.

Dworshak is now within two feet of full, Henriksen said; we reduced outflow yesterday to 3.2 Kcfs. For the week ending June 25, we saw an average flow of 62 Kcfs at Lower Granite, and 197 Kcfs at McNary. Based on the current forecast, she added, flows could be as low as 36 Kcfs - 37 Kcfs at Lower Granite next week, and around 175 Kcfs at McNary.

Cassidy said TDG levels are still high at the Camas/Washougal station; with the record high air temperatures, gas levels have increased downstream of Bonneville, a situation that was compounded by recent operations at the project. At the start of the week, gas levels at Camas/Washougal were low; the Corps increased spill in response. Then air temperatures started to rise, Cassidy said; by the time we hit 120% TDG at Camas/Washougal, we had already cut back on spill the day before, but it takes about 24 hours (the following day) to see the impact of that change in operation at the monitoring station. Answering a question from Scott Bettin of BPA about a letter from Washington

DOE and Oregon DEQ concerning better compliance with the water quality waivers, Cassidy said he has sent an email to Mark Schneider of NMFS about the possibility of drawing on the combined expertise of the both agencies to develop a better procedure. Further comment was that the WQT could also be utilized to develop a procedure for avoiding this situation in the future.

On the fish migration front, said Wagner, beginning with subyearling chinook at Lower Granite, we're seeing big numbers – 8,700 as of June 28, down from 11,000 the day before. These are huge numbers for this population, compared to the historic record, Wagner said. We're still seeing daily indices in the 400,000 range at McNary, down from 600,000+ on June 26. With respect to subyearling chinook at Lower Granite, said Wagner, the cumulative index is about 300,000 to date, with a total predicted run of 900,000. Passage timing appears to be normal this year; we're in the middle of the run. At McNary, the subyearling chinook index is about 5 million to date; we expect to see about 8 million subyearlings, total, at McNary. In other words, he said, we're currently at the peak of the subyearling run at McNary. Regarding adult migration, he added, we have already seen 10 adult sockeye so far at Lower Granite, while 297 adult sockeye have already returned to Bonneville Hatchery, to date.

VIII. New System Operational Requests.

On June 28, CRITFC submitted SOR, C-2, covering Grand Coulee operations. This SOR, supported by the CRITFC tribes, requests the following specific operations:

- Meet the BiOp refill target of 1290 feet by June 30, 2000
 - In order to meet this requirement, operating agencies should accomplish the following actions: 1) BPA should obtain, through purchase or other means, additional Canadian storage to refill Lake Roosevelt, and 2) Reclamation should refrain from pumping 250-500 KAF from Lake Roosevelt to Banks Lake.

Kyle Martin spent a few minutes going through the contents and justification of this SOR, the full text of which is available from the Fish Passage Center's website.

Bob Heinith asked the other TMT participants to look closely at the attachments to this SOR, which detail the Corps' flood control operation at Grand Coulee in 2000. Realistically, he said, we don't expect that the reservoir can be filled in the next couple of days; however, we would like the federal operators to aggressively pursue the additional sources of water laid out in the SOR, so that we have more of a cushion for operating later in the summer period.

I'm wondering, given our focus on current operations, whether the TMT is the proper place to bring this SOR, McCarty said. Basically, we've been trying, unsuccessfully, to get the Corps to engage with us on this issue on a policy level, Heinith replied; we would like to get a response from TMT, while we continue to pursue policy-level resolution.

Hasn't CRITFC supported many of the SORs and flow targets that have been set earlier this spring? Bettin asked. We have supported some of them, said Heinith; really, however, we're arguing over peanuts, compared to what was available this spring – most of the available flow has already been sent downstream, because of the Corps' flood control operation.

The answer is that there is no extra water to be secured, Bettin said – any water that is in the upper basin will be released eventually, but we don't have authority to tell the Canadian project operators when and how it should be released. We would like to have some sort of a dialogue with Bonneville over the details of what they have been discussing with Canada, Heinith said – Judi Johansen has told us, during the consultation process, that BPA is actively pursuing additional Canadian storage. It's not just BPA, said Bill Branch of the Corps – it's a cooperative Federal effort, but it's not going to happen overnight.

Again, said Heinith, we're pretty frustrated with the Corps, and their unwillingness to discuss this issue.

A couple of comments, said Henriksen – your characterization of this year's flood control operation is inaccurate; I've tried to talk to you about that in the past, and there isn't much point in continuing to talk about it at this point in the season. It is inappropriate to accuse the Corps of mismanaging flood control this year, she said – that is

simply inaccurate. The drafting of projects below flood control was not a Corps initiative; rather, it was implemented based on recommendations of the salmon managers.

With respect to the Banks Lake portion of the SOR, Fodrea said that isn't something that can happen overnight; discussion of the Banks Lake operations are continuing, in the context of the new BiOp, but at this point, we don't know what's going to happen, she said.

One question for NMFS, said Heinith – what sort of consultations have you had with the operators on this issue, given the fact that refilling Grand Coulee is a key reasonable and prudent operation called for in the BiOp? There was a TMT conference call on Monday, said Wagner; the 1998 BiOp allows the flexibility for Grand Coulee to be refilled later, or not at all – it's a TMT decision. At Monday's conference call, there was a decision, consistent with the 1998 BiOp, to delay refill at Grand Coulee, with the recognition that full refill may not be possible this year. The reason for that is the current status of the migration, Wagner said; given the large numbers of migrants currently in the system, drastic reductions in flow did not seem a prudent alternative. In response to another question from Heinith, Wagner said NMFS and TMT have been engaged in a dialogue with the Corps about Grand Coulee operations since February of this year, in the context of the TMT objectives discussions. In other words, he said, this is not a new issue; it has been revisited numerous times. Bettin noted that, as late as last week, it appeared that it would be possible to refill Grand Coulee while still keeping McNary flows at a reasonable level. As we said at last week's TMT meeting, we can still refill Coulee at any time, Bettin said – it just depends how low you're willing to let McNary flows go.

The tribes would like to consult with Reclamation on this issue as well as the Corps, Heinith said. I'd be perfectly willing to set up such a meeting, Fodrea replied. One point of clarification, said Jim Nielsen – you're talking about a reduction of 250 KAF-500 KAF in Banks Lake pumping, which would, I believe, result in about a 10-foot draft at Banks Lake. As we've heard in the past, Nielsen said, any draft deeper than the five-foot operating range at Banks Lake will require NEPA consultation; it would also raise cultural concerns among the local tribes.

Can we get a response from NMFS and the project operators on this SOR? Heinith asked -- I guess I've heard verbally from the operators, but I'm not sure where NMFS stands on the SOR. I would like something in writing to document the position of NMFS and the action agencies, said Heinith. The answer is simple, said Bettin – what you're asking is physically impossible to achieve by June 30. We could modify it to say fill Grand Coulee as quickly as possible, without impacting river flows below Grand Coulee, by moving aggressively to secure additional sources of water, Heinith said – if we could get a written response from NMFS and the action agencies within a few days, that would be helpful.

Given the fact that this is essentially a policy question, I would also suggest that you write a letter to the relevant executives, Henriksen said; she also noted that the minutes from today's meeting will include a summary of the discussion of this item. Fair enough, said Heinith – we'll send a letter to General Stoop, with the SOR attached.

In response to a question from Heinith, Wagner said that the one question he can answer is that the status of Canadian storage was discussed at yesterday's conference call. In terms of the situation at Banks Lake, Wagner said, it is unlikely that a drastic change in operations will be laid out in the new BiOp; I don't see any immediate change that would be of the magnitude you're requesting in this SOR. Where does NMFS stand on the issue of obtaining additional Canadian water? Heinith asked. It's not going to happen in the next couple of days, Wagner replied; it's not out of the question for this year. There is water coming from Canada, Bettin said – it's not as much as you would probably like to see, but there is some water coming down.

It sounds as though people are being asked policy-level questions they really can't answer today, said McCarty – perhaps it might be more productive for CRITFC to address these policy questions to the appropriate policy people. I would like the record to reflect that CRITFC is waiting for the written reply to the specific actions requested in this SOR, said Heinith. So noted, McCarty replied.

Could we go around the table, and ask where other agencies stand on these provisions? Heinith said. Nielsen replied that, with regard to CRITFC's positions on flood control and finding additional water, Washington is in agreement; with respect to the reduction in pumping at Banks Lake, Washington would not support that without a

corresponding reduction in Banks Lake outflow. Nielsen noted that the IT is actively engaged in looking for additional sources of water, including the possibility of drafting Banks Lake an additional three feet.

Yoshinaka said he echoes Nielsen's comments; Mallette said Oregon concurs with Yoshinaka and Nielsen, and supports refill of Grand Coulee in 2000, but is also concerned about flows at McNary, and providing the best possible migratory conditions for fish currently in the system. Rather than debating the decisions that caused the problem to occur, she said, we would prefer to focus on what we can do to address the problem now, and have prioritized flow over refill, for the moment, at least.

With that, the discussion moved on to the next SOR on the table today. On June 28, the salmon managers submitted SOR 2000-25, covering summer operations at Brownlee and Dworshak reservoirs. The SOR, supported by ODFW, USFWS, WDFW and NMFS, requests the following specific operations:

- Pass inflow at Brownlee through July 4. Beginning July 5, draft Brownlee at the established draft rate limitation of one foot per day.
- Implement the Biological Opinion measures at Dworshak Reservoir. Reduce discharge from Dworshak to 3.2 Kcfs at an outflow temperature of 48 degrees F through July 2. Pass inflow at Dworshak from July 2 to July 4 at an outflow temperature of 48 degrees F.
- Increase outflow from Dworshak to 10 Kcfs on July 5, utilizing a ramping rate of 4 Kcfs per hour. Maintain 10 Kcfs outflow through July 9, at an outflow temperature of 48 degrees F.
- Increase outflow from Dworshak to 14 Kcfs on July 10. Maintain outflows of 14 Kcfs until August 31.

Yoshinaka spent a few minutes going through the contents of this SOR, the full text of which is available via the FPC website.

What do you want to do with this today? McCarty asked. Our expectation is that we will discuss this SOR at the TMT meeting in Lapwai next week, Yoshinaka replied, although there are some elements that will need to be implemented before then – the Brownlee request and the request to increase Dworshak outflow on July 5.

Martin said the main difference between the two SORs is that the Nez Perce/CRITFC/Idaho proposal would wait until July 17 to ramp up Dworshak outflow, rather than starting now, and would hold some cool water from Dworshak for use on adult migrants in September – that's the main difference, he said.

In response to a question, Yoshinaka said rising water temperatures are the reason the salmon managers would like to see SOR 2000-25 implemented beginning July 5. In response to another question from Henriksen, Yoshinaka said the Dworshak Hatchery manager (Bill Miller) was on yesterday's conference call, and said he can live with a 48-degree release temperature from Dworshak this year.

Nielsen said that, earlier this morning, he had received an email from Jim Ceballos of NMFS, describing an increase in mortality and signs of thermal stress in fish that are currently being collected at Lower Granite Dam. Water temperatures are 2 degrees C higher than they were at this point last year; temperatures have increased 0.7 degrees C in the past two days. Ceballos' recommendation is that flow augmentation from Dworshak begin sooner than July 5, Nielsen said. Martin noted that the weather is forecast to cool off in Idaho over the weekend, and won't warm up again for about two weeks – temperatures are going to drop from the mid-90s to the upper 70s by this weekend, which should have some effect on water temperatures as well.

Dave Statler said the same kinds of stress will occur in fish later in the season, if there is no cool water available. Any new data available from the tri-level thermograph system? Heinith asked – it would be helpful to get real-time information from the lower level of Lower Granite reservoir, he said. I don't know the answer to that question, said Henriksen; I will coordinate with our Walla Walla District office to see what's available. It would be great if we could have that real-time information for use at next week's TMT meeting, said Heinith.

So what do we want to do about this SOR, given the new information from Jim Ceballos? McCarty asked. There are still high numbers of fish in the system, Wagner said. Do we want to discuss the CRITFC/New Perce/Idaho SOR at this time, or is there a need to discuss the justification of SOR 2000-25? The latter, said Statler. He spent a few minutes going through this justification, taking issue with a number of the supporting elements cited by FPAC: historic run timing, Clearwater River temperatures and their effects on fish growth, Dworshak reservoir productivity considerations and the limnological effects of the annual drawdown. Basically, he said, this sort of superficial treatment of the primary productivity question gives only a very small part of the real picture.

One question, said Wagner – it seems that much of your support for the actions in SOR NPT-1 is based on the idea that 40% of the wild Clearwater fish migrate during September – where was that taken from? From the graph, Statler replied. I understand that you don't want to pit fish against fish, said Wagner, but that's probably only about 5% of the total run, when you include hatchery-origin and supplementation fish. Still, that doesn't detract from the fact that this is 40% of the wild Clearwater-origin run, said Statler – they're very important to us. Don't the fish that outmigrated in September and October have the highest SARs (smolt-to-adult return ratio), historically? Wagner asked. I hope so, said Statler, but our real concern is that we don't want to leave those fish high and dry on September 1. To the extent that we can, we would like to improve conditions for the later-migrating fish. That doesn't mean we're not concerned about earlier migrants, Statler said, but still think it is important to take care of the fish migrating during the first two weeks in September.

Could we discuss the longer-term components of the two SORs next week in Lewiston? Bettin asked. No, because the two SORs are in conflict as to next week's operation, Statler replied.

At this point, it was agreed to transition to a discussion of SOR NPT-1, which also lays out a plan for Dworshak summer operations. This SOR, supported by the Nez Perce Tribe, the State of Idaho and CRITFC, requests the following specific operations:

- Keep Dworshak at full pool, 1600 feet, through July 16. Pass inflow until then using 47 degree F water.
- Ramp up flows to 14 Kcfs by mid-day July 17, and hold through July 30.
- From July 31 through August 27, reduce flows to 12 Kcfs.
- From August 28 through September 3, reduce flows to 8 Kcfs.
- From September 4 through September 10, reduce flows to 5 Kcfs
- From September 11 through September 17, reduce flows to 4 Kcfs
- From September 18 through September 24, reduce flows to 3 Kcfs.

For Brownlee Reservoir, beginning July 3, outflows of 18 Kcfs and decrease to 10 Kcfs by the end of September.

Martin spent a few minutes going through the details of this SOR, the full text of which is available via the FPC webpage.

One administrative question, said Henriksen – do Idaho and IDFG support this SOR? Yes, Martin replied. Also, said Turner, I had a question about the sampling that occurred on June 20; you said there were two groups of Clearwater fall chinook sampled, one in the 47 mm range and another larger group. The SOR does not give information on the larger group. What proportion of the total fish sampled was in the smaller group, and what was the average size of the larger group? Turner asked. The larger size group comprised about 25% of the total fish sampled and averaged 75 mm in length, Statler replied; these fish could outmigrate at any time, while the smaller group is expected to outmigrate around the end of July.

Let's begin with Brownlee operations, Henriksen suggested – earlier, we heard from Ningjen Liu that Idaho Power is planning to pass inflow through the weekend. True, Liu replied; we have already scheduled through Saturday, but may be able to implement the requested ramp-up beginning Sunday. You're saying this is doable? McCarty asked. Yes, except on Sunday, not Saturday, Liu replied – we also need to talk to BPA about the energy exchange. We'll take care of that, Robyn MacKay replied.

Henriksen noted that SOR 2000-25 asks that Brownlee begin drafting on July 5, while NPT-1 requests that the

Brownlee draft begin on Monday, July 3. Would the Nez Perce, Idaho and CRITFC be willing to wait to draft Brownlee until July 5? Henriksen asked. I don't think two days would make a great deal of difference, Martin replied; I would be comfortable with that. The Nez Perce would be comfortable with that as well, Statler added. So we have agreement on the Brownlee operation? McCarty asked. Yes, said Statler. I would add that one foot per day is not equivalent to the 18 Kcfs cited in NPT-1, said MacKay; Liu agreed, saying it is probably closer to 16 Kcfs. I think that's fine, said Statler. Is that also OK with Idaho? Henriksen asked. What's the planned operation, again? Ed Bowles asked. That we will pass inflow at Brownlee from July 2-4, then begin drafting at a rate of one foot per day beginning July 5, resulting in a 16 Kcfs increase in Hells Canyon discharge, Bettin replied. That's fine, Bowles replied.

With respect to Dworshak operations, said Henriksen, we're currently releasing 3.3 Kcfs and trying not to exceed the state TDG standard. We will be working with the project to reduce discharge temperature to 48 degrees F by later today, she added. What's the current inflow to the project? Bettin asked. About 5.6 Kcfs yesterday, Henriksen replied; it is expected to average about 5 Kcfs this week.

So the two proposals don't really diverge until we get to Wednesday of next week, Bettin observed – both ask that we pass inflow from Dworshak through Wednesday. Could we split the baby, and release, say, 7 Kcfs starting Wednesday? Bettin asked. That would not be acceptable to us, Statler replied.

The group spent a few minutes discussing the Dworshak operation, in the context of the current weather forecast; Yoshinaka observed that there is about a 7-day lag time between Dworshak and Lower Granite, so it is important for the water to be released from Dworshak prior to July 15. Heinith reiterated his call for Dave Bennett's tri-level thermograph data; it would be extremely helpful to have that data to inform this discussion, he said.

Maybe it would do us some good to pass total inflow, at 48 degrees, between now and our meeting in Lewiston, said Statler. Inflows could go as low as 4 Kcfs by next week, however, Wagner observed. So that may not be enough volume? McCarty asked. It may not be as much as we're seeing now, is my point, Wagner said. We would want to pass inflow or fill through Fourth of July weekend, said Statler. In response to a question from Bettin, Henriksen said the difference in reservoir elevation, if 5 Kcfs is maintained from Dworshak through Thursday, would be less than 1 foot, compared to the elevation that would result if the project simply passes inflow.

So next Thursday, we'll have an opportunity to discuss this face to face, and we'll also have a chance to see whether or not Kyle's cooler temperatures cause a drop in water temperature at Lower Granite? Bowles asked. That's correct, said Nielsen, although I would be very surprised if we see any reduction in water temperatures – once you let a water temperature problem develop in the Lower Snake, it's very difficult to do anything about it, which was one of the conclusions CRITFC reached in the early 1990s.

So is it fair to say that you don't have enough information to make this hard decision, or are you just avoiding it? McCarty asked. Probably the latter, Wagner replied. Statler said Heinith's request for the tri-level thermograph data is a valid one; Nielsen noted that Ceballos' observations of temperature-related problems beginning to occur at Lower Granite also need to be factored into this decision. Heinith replied that the tribes' position is that, when temperatures in the collection facilities rise to the point that health problems begin to occur, the fish need to be released so that they can seek cool water refugia. Statler agreed.

So what do we want to do? McCarty asked. Do we need to take immediate action? Is there any room for compromise? There are two SORs on the table; the one NMFS supports says ramp Dworshak up beginning Wednesday. If water temperatures begin to cool off next week, Wagner said, we can reduce Dworshak outflow. However, I don't see any evidence that would convince me that SOR 2000-25 should not be implemented at this time.

In response to a question from Statler, McCarty said that, if there is an objection to this proposed operation, it will be raised to the IT. Before we get there, where are we on the compromise proposal, passing inflow through next week? Statler asked. I'm concerned that inflows to Dworshak are falling, and could drop below the current 3.3 Kcfs, Wagner replied. I thought it might actually increase flows – that's why I offered it, Statler said. And I accepted it as a good-faith alternative, said Wagner; we might be able to tie that proposal to a minimum discharge level of 5 Kcfs, with the reservoir elevation going wherever it goes. Then, on Wednesday, Dworshak discharge would increase to 10 Kcfs.

The Corps' plan is to continue to release 3.3 Kcfs from Dworshak until I hear differently, until the project fills, said Henriksen – there is no other agreement in place at this time. As a compromise, said Statler, I would be comfortable with releasing 5 Kcfs from Dworshak through July 9, and discussing what to do the following week at next Thursday's meeting. So that would be 5 Kcfs, regardless of inflow? McCarty asked. Actually, I think what we've agreed to is 3.2 Kcfs discharge until Wednesday, at which point discharge would be increased, to either 5 Kcfs of 10 Kcfs, Bettin said.

Does someone want to restate the most recent proposal? McCarty asked. To hold discharge at 3.2 Kcfs until Wednesday morning, at which point Dworshak discharge would be increased to 5 Kcfs, Bettin replied; the 5 Kcfs discharge would then be held through July 9. I heard something slightly different, said Wagner – start releasing 5 Kcfs now and hold that level through July 9. Actually, what I said was that, if we pass inflow, we would probably see 5 Kcfs anyway, said Statler; we can also agree to maintain a 5 Kcfs minimum through July 9.

After a few minutes of additional discussion, Bowles suggested that 5 Kcfs be maintained as a minimum Dworshak outflow through July 6, at which point the TMT will make a decision about whether or not to change that operation. At this point, the salmon managers requested a caucus.

When the meeting resumed, Yoshinaka said the salmon managers would be willing to agree to the following compromise: release 3.5 Kcfs from Dworshak through July 2; increase outflow to 5 Kcfs on July 3-4, to 7 Kcfs on July 5-7, to 10 Kcfs on July 7-9 and to 14 Kcfs beginning July 10. That's not acceptable to the tribes, said Greg Haller. CRITFC opposes the compromise as well, said Martin. What about Idaho? McCarty asked. I'm fine with that compromise, said Steve Pettit; I'm concerned with conditions at Lower Granite, and I don't share Kyle Martin's optimism about the effects of the changing weather conditions on water temperatures.

The tribes are not official participants in this process -- can they elevate this issue? Bettin asked. I don't believe so, Wagner replied; however, if there is a desire on the part of the tribes to elevate this issue, I would be willing to check with my IT representative to see if that would be acceptable. I would want to check with my representative as well, said Henriksen, as did Yoshinaka. Do the tribes want to elevate it? Bettin asked. I don't know, at this point, Haller replied – as we said earlier, we wanted to have some additional time to consider additional information. This isn't even a compromise, really, said Martin – you're basically just implementing the salmon managers' SOR. Actually, that's not true, said Bettin – if you want us to ramp up outflow to 10 Kcfs on Wednesday, we could do that.

If you're basically going to implement the salmon managers' SOR, I don't see much point in your coming to Lewiston, said Haller. There would still be an opportunity to do something different, said Wagner; there is also value in continuing to discuss these issues face to face. So your decision today is based on the still-incomplete temperature situation, as well as Jim Ceballos' email, which said the biological problem is not serious yet? Haller said. In part, said Nielsen, you also need to bear in mind the flow situation, which is deteriorating.

Basically, you're talking about starting a week and a half earlier than us – that's not a huge difference, Haller said. That's the kind of information we can sit down and discuss face to face next week, said Wagner. The concern is that if you implement what you describe as a compromise, that will basically preclude the possibility of providing September flows, and implement the tribal plan, Haller said. I think Dave Statler made a very reasonable offer – let's release 5 Kcfs until we meet on July 6. Pettit and Martin said Idaho and CRITFC would be willing to support Statler's compromise as well.

Wagner observed that there isn't a great deal of difference, in terms of volume, between the FPAC compromise proposal and Dave Statler's compromise proposal, at least through July 6. Does that mean you would be willing to accept the straight 5 Kcfs, then discuss what happens after July 6 at the Lapway meeting? Haller asked. No, we would need to increase to 7 Kcfs on July 5, Wagner said – 5 Kcfs is very different from 10 Kcfs, and we are meeting you in the middle. Why not go with 5 Kcfs today, instead of keeping it at 3.3 Kcfs now? Bettin asked. It would be volume-neutral through July 6, Henriksen observed. We could then make the operational decision on Thursday, Bettin suggested. Your proposal is that we decide on our operation through July 6, then worry about what happens after that at the July 6 meeting? McCarty asked. Yes, my proposal is that we release 5 Kcfs between now and July 6, then, when we

have all of the information in front of us, make that decision about future operations, said Bettin – the two proposals are exactly volume-neutral.

After a few minutes of additional discussion, Wagner noted that 10 Kcfs was already a compromise from 14 Kcfs; 7 Kcfs was a further compromise, and 5 Kcfs is a much larger compromise. So where does that leave us? said McCarty. At this point, the salmon managers requested another brief caucus.

When the meeting resumed, Yoshinaka said the salmon managers are unwilling to accept the 5 Kcfs compromise, and would prefer to stick with the compromise proposal developed during the first caucus. What does that mean for this week? McCarty asked – first, that the tribes and Idaho need to decide whether or not they want to elevate this to IT. It sounds as though the salmon managers (ODFW, WDFW, NMFS and USFWS) are sticking with their recommendation from the first caucus, Henriksen said. Does Idaho want to elevate that issue? We're willing to do so, with the hope that IT will be willing to consider holding 5 Kcfs through July 6, at which time we'll have the full complement of temperature information to consider in a face-to-face discussion, said Bowles. CRITFC and the Nez Perce would support that, said Martin and Haller.

What additional information are you hoping will be available at the meeting in Lapwai? Nielsen asked. The tri-level thermograph data, and another week's weather data and forecast information, Haller replied. Don't pin your hopes on having the tri-level thermograph data, said Henriksen – at this point, I'm not even sure the tri-level thermograph instruments have been deployed.

How do we frame this issue for IT? Wagner asked – is it two different proposals, or three proposals? It's the 5 Kcfs proposal vs. your first caucus proposal, Haller replied. That doesn't eliminate the option of the IT picking a third alternative? Wagner asked. That's always an option, said Pettit. In response to another question from Bowles, Wagner said the IT will be contacted immediately, with the goal of convening a 3 p.m. conference call this afternoon. In response to another question, Henriksen said Bowles is the most logical person to frame this issue for the IT.

It sounds, then, as though this issue is going to be elevated to the IT by Idaho, said Henriksen. The salmon managers have proposed a compromise operation; Idaho has made a counterproposal that Dworshak outflow be ramped up to 5 Kcfs, beginning immediately, and held at that level through July 6. That's correct, said Bowles; in addition, the discharge temperature would be 48 degrees F under both proposals. After a few minutes of further discussion, it was agreed that each TMT representative will brief their IT representatives on this issue, including both the original NPT and FPAC SORs and the proposed compromises. I'll call Brian Brown as soon as we're done here, Henriksen said.

IX. Recommended Operations.

Recommended Snake River operations were extensively discussed during the previous agenda item, and were set to continue in an IT meeting later in the day. For the Columbia River, TMT agreed to continue with a flow objective of 175 kcfs at McNary for the week ending July 9, and refill Grand Coulee to the extent feasible.

X. Next TMT Meeting Date and Location.

The next meeting of the Technical Management Team was set for Thursday, July 6 at the Bureau of Indian Affairs office in Lapwai, Idaho. Meeting notes prepared by Jeff Kuechle, BPA contractor.

TMT ATTENDANCE LIST JUNE 29, 2000

Scott Bettin	BPA	503/230-4573
Scott Boyd	COE	503/808-3943
Dick Cassidy	COE	503/808-3938
Ken Dragoon	PaciFiCorp	503/262-4951

Kim Fodrea	Reclamation	503/872-2802
Richelle Harding	D. Rohr & Associates	503/771-7754
Cindy Henriksen	COE	503/808-3945
Cathy Hlebelchuk	COE	503/808-3942
Robyn MacKay	BPA	503/230-3385
Christine Mallette	ODFW	503/872-5252 x 5352
Kyle Martin	CRITFC	503/731-1314
Patricia McCarty	Facilitator	
Rudd Turner	COE	503/808-3935
Paul Wagner	NMFS	503/231-2316
Marv Yoshinaka	USFWS	360/696-7605

On Phone:

Name	Affiliation	Phone
Ed Bowles	IDFG	208/334-3791
Greg Haller	Nez Perce Tribe	
Bob Heinith	CRITFC	503/731-1289
Steve Hemstrom	Avista Utilities	
Ningjen Liu	Idaho Power	
Jeff Laufle	COE	
Joe Lukas	Grant County PUD	
Jim Nielsen	WDFW	360/902-2812
Steve Pettit	IDFG	208/799-5010
Craig Sprankle	Reclamation	
Dave Statler	Nez Perce Tribe	
Glen Traeger	Avista Energy	

TECHNICAL MANAGEMENT TEAM

BOR: *Kim Fodrea\Pat McGrane*

NMFS: *Paul Wagner\Chris Ross* BPA: *Scott Bettin\Robyn MacKay*

USFWS: *Marv Yoshinaka\Bob Hallock\Susan Martin*

OR: *Christine Mallette \Chuck Tracy* WA: *Jim Nielsen* ID: *Ed Bowles\Steve Pettit*

MT: *Jim Litchfield* COE: *Cindy Henriksen\Rudd Turner\Dick Cassidy*

COLUMBIA RIVER REGIONAL FORUM

TECHNICAL MANAGEMENT TEAM

MEETING NOTES

June 30, 2000 (1400 – 1445 hours)

Libby Conference Call

**CORPS OF ENGINEERS NORTHWESTERN DIVISION OFFICES – CUSTOM HOUSE
PORTLAND, OREGON**

DRAFT

I. Greeting and Introductions

The June 30 Technical Management Team conference call, to discuss Libby Dam operations, was chaired by Cindy Henriksen of COE. 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.

Henriksen welcomed everyone to the meeting, then led a round of introductions and a review of the agenda.

II. Libby Dam Operations (Continued).

Rudd Turner reported that rampdown from the sturgeon operation began yesterday morning at Libby Dam. The project reduced outflow from 25 Kcfs to 15 Kcfs yesterday; went to 12 Kcfs this morning, will go to 10 Kcfs tomorrow, 9 Kcfs Sunday, and 8 Kcfs by Monday morning, July 3. From that point, we plan to hold 8 Kcfs outflow, Turner said. There is no new forecast information available since our last meeting, Turner said; the current forecast indicates flows will be ramped up to about 11 Kcfs at the end of July, and the reservoir drafted to elevation 2439 feet on August 31. Maximum elevation at Libby in 2000 is forecast to be just under elevation 2442 feet on August 5.

On the biological front, said Bob Hallock, as agreed, we shortened this year's sturgeon operation to 17 days. As was reported previously, three fish have been captured from the larval releases. The larvae that have been released appear to be surviving well, he said; two groups have been put out so far. The plan is continue to sample these larvae throughout the summer, using very fine-mesh gill nets. They are spawning the last fish in the hatchery today, Hallock said; the

survival to hatch from the first fish that spawned was excellent, and they're getting ready to release another 11,000 of those fish soon. In response to a question, Hallock said the B.C. Ministry of the Environment will be conducting most of the gillnet work.

Gillnetting is a lethal sampling technique, said Turner – is that a concern? It isn't necessarily lethal, Jeff Laufle replied – it depends on your soak time. Also, said Hallock, the information we would get from this sampling is probably worth the risk. The bottom line is, we're prepared to accept some incidental take.

The information that is being gained this year is just for this study of larval fish? Henriksen asked. There is still some natural spawning occurring, said Hallock; we're trying to bracket the causes of mortality. If we can find out where most of the mortality is occurring, he said, that will help us better focus our efforts in the future. The thinking right now is that most of the mortality is occurring during the first three weeks of life.

Is it too early to speculate about what you may want to do next year? Turner asked. We're planning a similar study, with the larvae released nearer the mouth of the Moyie River, above Milner, Hallock replied – if we see something dramatic from this year's study, however, that could change what we'll do next year. In response to a question from Turner, Hallock said a sturgeon recovery team meeting is scheduled for November 7-8; at that meeting, there will be considerable discussion of next year's operation.

So we have described our planned operation for the coming weeks, Turner said; there is still some discussion of the 6 Kcfs versus 8 Kcfs base flow question. Chris Hunter has indicated that Montana's preference would be to release 8 Kcfs; Larry Lockhart sent a memo saying his preference would be to hold 9 Kcfs, although the Montana USFWS office is willing to discuss a lesser flow, down to 6 Kcfs, given concerns about adequate flows for salmon.

One comment, said Hallock – we don't have a BiOp in place on bull trout at this point; given the low water supply this year, and the fact that the difference between 6 and 8 Kcfs equates to 2.5 feet in reservoir elevation at Libby... I guess the Fish and Wildlife Service's Montana office would prefer a base flow of 9 Kcfs, rather than 6 Kcfs, but they're willing to leave the choice up to Montana. I just want to know whether Chris Hunter understands that that 2 Kcfs difference in flow is worth 2.5 feet in pool elevation, Hallock said. They do, Cathy Hlebechuk replied.

Henriksen expressed some concern about the fact that no one from the State of Montana or the Montana USFWS office is on today's call; we did try to contact Jim Litchfield, but obviously, he was unable to participate, she said. You did, however, talk to Chris Hunter, Hallock observed. Based on our previous decisions, and what I've heard today, it sounds as though the consensus is to go with 8 Kcfs base flow from Libby, Henriksen said. No disagreements were raised to this summary. Henriksen added that, given the current flow forecast, it appears unlikely that Libby outflow will increase much during August – in other words, she said, we could be at 8 Kcfs Libby outflow for the rest of the summer.

Is there a need for future Libby operations subgroup conference calls? Henriksen asked. After a brief discussion, it was agreed to schedule periodic updates on the sturgeon monitoring at TMT; it would also be helpful to get some information on habitat conditions, research on and operational interactions between salmon, sturgeon and bull trout this summer. If there is any problem with the 8 Kcfs base flow, it would be helpful to know that, as well, Turner said. We'll see what we can find out, said Hallock and Laufle. Also, if flow conditions change, we'll reconvene the Libby subgroup in a conference call, Turner said.

TMT Conference Call

June 30, 2000

List of Participants

Scott Bettin BPA
Scott Boyd COE
Bob Hallock USFWS
Cindy Henriksen COE

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TECHNICAL MANAGEMENT TEAM

BOR: *Kim Fodrea\Pat McGrane*

NMFS: *Paul Wagner\Chris Ross* BPA: *Scott Bettin\Robyn MacKay*

USFWS: *Marv Yoshinaka\Bob Hallock\Susan Martin*

OR: *Christine Mallette \Chuck Tracy* WA: *Jim Nielsen* ID: *Ed Bowles\Steve Pettit*

MT: *Jim Litchfield* COE: *Cindy Henriksen\Rudd Turner\Dick Cassidy*

**TECHNICAL MANAGEMENT TEAM
MEETING NOTES
July 6, 2000
BUREAU OF INDIAN AFFAIRS OFFICES
LAPWAI, IDAHO**

TMT Internet Homepage: <http://www.npd-wc.usace.army.mil/TMT/index.html>

DRAFT

Donna Silverberg was the facilitator and these notes were prepared by Jacqueline Abel.

The following is a list of items that the Technical Management Team (TMT) discussed at its last meeting that will require future action or discussion, some of them before the next TMT meeting. For a complete discussion of agenda items, see the meeting minutes when they are posted on the TMT homepage.

1. Recommended OPERATIONS. TMT members did not reach consensus on operations of Dworshak Dam. IDFG, as a TMT member, raised the issue to IT for resolution. during their conference call for 10:00 AM on Friday, July 7. IDFG, the Nez Perce Tribe, and CRITFC supported a proposal to continue the current DWR discharge for another week. NMFS, USFWS, WDFW, and ODFW supported SOR # 2000-25, and called for DWR increases at this time.

2. IT ISSUE. TMT spent some time framing the issue for the IT, and agreed on the following language to present to the IT:

"Given the current cool weather patterns and water temperatures in the Snake River Basin, should:

a) the region continue to operate DWR at the 6.5 kcfs level developed by IT for one more week in order to maintain greater flexibility later in the season?

OR

b) DWR discharge be increased to 10 kcfs on Friday, 7 July, and 14 kcfs on Monday, 10 July, to provide flow and temperature for the migrating juveniles currently in the river?

NOTE: TMT requested today that the Idaho Power Company increase discharges from Brownlee for one week, (to as much as much as 2 ft./day) to help offset low flows and temperature increases at Lower Granite Dam. (This is not a request for more than 427 KAF - it is a request for reshaping the 427 KAF given current conditions and needs of fish.)"

At the end of the TMT meeting, Paul Wagner was able to contact Idaho Power. In response to this request, IPC has agreed to increase the BRN draft rate from the current 1.0 ft./day up to 1.5 ft./day. They expect the Hells Canyon discharge to increase by about 3 kcfs, from the current 17 kcfs up to about 20 kcfs. This operation will begin Sunday, 9 July and continue until Saturday 15 July.

3. Paul agreed to write a letter to Idaho Power (if they need it) making the formal request from TMT for the increase in discharges from Brownlee.

4. Kim noted at the end of her update on the Hungry Horse subgroup, that they won't be meeting again unless needed. This no longer needs to be a separate agenda item at TMT meetings, because any information can be handled as part of the TMT operations discussion.

5. Kyle Martin agreed to share the entire set of materials that he presented at today's meeting. He will email them to Cindy and Rudd and the COE will get them out to TMT.

REMINDER TO TMT members: At the July 12 IT meeting, in the morning, there will be a presentation of interest to TMT members and they are invited to attend. A Dissolved Gas Model will be presented by Mike Schneider of the Corps of Engineers Waterways Experiment Station. The meeting is at NMFS, Fifth Floor Conference Room, Call-in Telephone Number – 503 872 2897.

I. Greeting and Introductions

The July 6 Technical Management Team meeting, held at the Bureau of Indian Affairs offices in Lapwai, Idaho, was chaired by Cindy Henriksen of COE and facilitated by Donna Silverberg and Jacqueline Abel. 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.

I. Welcome and Introductions.

James Holt welcomed everyone to Lapwai, and spoke for a few moments about the Nez Perce tribal recovery programs, and the impact of the TMT's operational decisions, and federal processes like the 2000 FCRPS Biological Opinion, on local residents. He expressed hope that the region can continue to seek innovative solutions that benefit all stakeholders in the region, as well as the fish and the rivers. I hope we can have a fruitful meeting here today, he said.

Henriksen then led a review of today's agenda, and a round of introductions. Donna Silverberg briefly reviewed the TMT ground rules.

II. Minutes of Previous TMT Meeting.

It was decided to defer this agenda item.

III. Libby Sturgeon Flows Update.

Marv Yoshinaka said he had asked Bob Hallock to call in to today's meeting; since Hallock was unable to do so, Yoshinaka said he will try to get an update from Hallock to insert into the minutes from today's meeting. The sturgeon pulse ended last week, said Yoshinaka; as most of you are aware, we're now in the bull trout flow period, releasing 8 Kcfs from Libby. The Libby operations subgroup held a conference call last Friday, Henriksen said; at that point, we had already begun to ramp Libby outflow down from 25 Kcfs to 8 Kcfs. The purpose of the call was to decide whether or not to continue with the plan as had been previously laid out, with 8 Kcfs Libby outflow through the summer period; that was, in fact, what we decided to do, although there was no Montana representative on Friday's call, said Henriksen. Chris Hunter did send an email, expressing Montana's support for the 8 Kcfs outflow, she added.

Lake Kookanoosa has not been filling the way we hoped, due to reduced inflow, Henriksen said; the current model runs show that Libby will only be at elevation 2441, 18 feet from full, by July 31. The original plan, however, continues, and we are continuing to model that in the SSARR run, Henriksen said.

Jim Litchfield noted that the SSARR run shows a step-up in Libby outflow during August, and asked whether that is based on the latest inflow forecast. Is that based on the best information we currently have, in other words? he asked. This is still the same plan we started with, Henriksen said; the plan is to get down to elevation 2439 by August 31, which may mean a slight increase in Libby outflow in August. Inflows to the project, again, are far lower than normal, and much less than expected. Montana would like to see the 8 Kcfs outflow continue, Litchfield said; I just wanted to confirm that we would like to see the operation that is planned.

Has the subgroup scheduled any additional conference calls? Paul Wagner asked. We agreed, at Friday's conference call, to address this issue with regular updates during the TMT meetings, unless the runoff volume forecast diminishes significantly, or there is a problem with the delivery of the 8 Kcfs outflow from Libby, Henriksen replied.

Montana has no problem with the planned ramp-up to 12 Kcfs on August 1? Wagner asked. I'm not sure I know the answer to that, at this point, Litchfield replied, but conceptually, yes – we know this is a bad water year, and that the plan is to take the full 20 feet from Libby in 2000.

IV. Hungry Horse Subgroup Update.

Kim Fodrea reported that the Hungry Horse subgroup has little new to report; it met June 23 and developed some operational goals for Hungry Horse this summer – draft to elevation 3540 by August 31, avoid a double peak, release about 6 Kcfs in order to achieve the end-of-August elevation. We won't be meeting again, unless there is some problem with that operation, she said.

V. Current System Operations.

Henriksen said Libby is currently at elevation 2422, far below where it was hoped the project would be at this point in the season, and releasing 8 Kcfs. Fodrea reiterated that Hungry Horse is releasing 6 Kcfs; current project elevation is 3458 feet. Grand Coulee is at about elevation 1283, she added; we're continuing to try to meet 175 Kcfs at McNary. I don't expect the project to fill much this week, Fodrea said; hopefully it will fill somewhat next week. Fodrea said she will provide some details on the Upper Snake accounting at next week's meeting. Will Grand Coulee refill by the week of July 16? Yoshinaka asked. It will refill, but by July 16? Fodrea replied – only if you believe the forecast.

Ningjen Liu reported that Brownlee passed inflow during the July 4 weekend; the project is currently drafting at a rate of 1 foot per day, and releasing about 17 Kcfs.

At Dworshak, said Henriksen, we're releasing 6.5 Kcfs, starting early Friday morning. Water temperature on the release is near 48 degrees. Inflow to the project is about 4.2 Kcfs on a day-average; the highest elevation was reached last Thursday at midnight. Dworshak is now drafting slightly, and is about 2.5 feet from full. At Lower Granite last week, average flow was just under 40 Kcfs; at McNary, 189 Kcfs.

Dick Cassidy reported that, on the TDG front, rain damage occurred at the Camas/Washougal fixed monitoring station, which resulted in some false high TDG readings of 123-124%. Once that damage was repaired, he said, you can see that the TDG readings at the station were actually on the low side; we subsequently increased spill from 110 Kcfs to 115 Kcfs at Bonneville. Gas levels at Camas then increased to just over 115%, Cassidy said. We have subsequently reduced spill slightly at Bonneville, to get the readings at Camas under 115% again.

On the fish migration front, said Wagner, the issue of the greatest interest is passage at Lower Granite Dam. We track that through index counts at the project, he said; over the last seven days, the index has been running as follows:

6/28: 8,780
6/29: 23,200
6/30: 14,850
7/1: 13,800
7/2: 41,050
7/3: 71,900
7/4: 16,800
7/5: 35,650

The highest index count ever previously recorded at Lower Granite was about 22,000, Wagner said – in other words, this year's numbers are huge. This is not unexpected, given the recent changes to the program; the bottom line is that the fish are there now, in numbers. The other relevant piece of data is the PIT-tag numbers on the Upper Snake fish; we tagged a total of 1,500 fish, and have recovered about 12% of those tags to date. This is the wild component of the Snake River population, he explained; again, the numbers are large, and hopefully, will continue high. Typically, if we see 50% of the tagged fish at the dam, that is an indication that survival to the project is good.

Wagner also touched briefly on cumulative passage to date; before each season, we develop an estimate of the number of fish we expect to see at a given location. This year's estimate was about 800,000; we expected to see the vast majority – 95% – of the run passing between June 15 and August 30. So far, run timing is nearly identical to the historic data, and we're right in the middle of the run, Wagner said. In other words, we're in a period when management efforts are extremely important – many wild and hatchery fish are currently passing the project. This is strictly wild and hatchery subyearling chinook at Lower Granite, Wagner added.

At McNary, the situation is almost identical, except that the numbers are much bigger, said Wagner – the projected run is 8 million, rather than 800,000. The run timing is somewhat earlier at McNary; current daily indices are in the 200,000-500,000 range.

What about adults? Scott Bettin asked. Sockeye are showing up at Lower Granite in large numbers, Wagner replied – the count to date is 97 Snake River sockeye. Given the fact that we have seen less than eight returning adults in any given year since 1992, it is heartening to see some fish returning from that program, he said, adding that, typically, about half of the fish that reach Lower Granite eventually make it up to Redfish Lake. On paper, the 2000 Snake River sockeye run is 300 fish, Steve Pettit added.

Dave Statler said he had some fish growth information to offer for the Clearwater juvenile fall chinook, based on tribal sampling. As you'll recall, he said, we reported an average size of 47 mm on June 20; we sampled again on June 26, at which point the average size was just over 60 mm. The fish outmigrate at anywhere from 80 mm-90 mm, he added; there is a considerable variation in size among the sampled fish. We're probably about three weeks from the time these fish will reach outmigrational size, based on an expected growth rate of 1 mm per day, Statler added -- somewhere around July 21 is when we would expect to see a significant outmigration begin. The sampling sites are all below the confluence? Jim Nielsen asked. Yes, Statler replied.

VI. Snake River Summer Operations.

We have been talking about this issue since this year's pre-season planning period, said Silverberg; I would suggest that we focus our discussions on the new information that has emerged since last week's TMT meeting, rather than re-plowing old ground.

Kyle Martin said that, since last week's IT call, he had made some modifications to the tribal plan; essentially what we did was cut off some of the flow from Dworshak by late August. Rather than 12 Kcfs through the end of August, the new handout reflects an outflow of 6.5 Kcfs continuing through Sunday, July 9, when flows will be ramped up to 7 Kcfs. On July 17, Dworshak outflow would be ramped up to 14 Kcfs; beginning July 31, Dworshak outflow would be reduced to 11 Kcfs; on August 21, to 10 Kcfs; on August 28, to 8 Kcfs, on September 4, to 5 Kcfs, on September 11, to 4 Kcfs, on September 18, to 3 Kcfs, on September 25, to 1.5 Kcfs. That is expected to leave Dworshak at elevation 1530 on September 3, Martin said

One of the things we argued about extensively last week was the effects of weather, said Martin. We currently have a low pressure area filtering out of the Yukon; cold air is spilling over us, and is expected to continue for at least the next week – temperatures aren't expected to be back to normal for this time of year until Thursday of next week, at the earliest

We were able to get some tri-level thermograph data from Dr. Bennett, Martin said; what it shows is that there is a 1-2-degree-C difference, on the lower side, between the tri-level thermograph data and the forebay monitoring data. Henriksen noted that the tri-level data has not been quality-checked, and said she cannot vouch for its accuracy.

Wagner noted that it appears as though the tri-level thermograph and forebay monitoring data are converging, at the moment; both show a forebay temperature of about 67.5 degrees.

After last week's IT conference call, said Martin, I contacted John Yearsley and asked him to do a couple of additional temperature model runs; what those runs show is that, with the "compromise" flows, under the tribal plan, there would be a small temperature spike above 20 degrees C at the end of July, and another in September. The rest of the time, temperatures are below 20 degrees C. Under the salmon managers' plan, temperatures would be lower until we run out of water in late August, at which point we see a fairly dramatic spike in water temperatures during the adult migration period. Doesn't weather have a great deal of influence on temperatures? Henriksen asked. Yes, Martin replied – the model run assumes average weather conditions.

Wagner noted that he had asked Yearsley if his model has been re-run to reflect actual weather conditions; Martin replied that it has not been – this model is based on the very hot 1998 weather year. In 1998, water temperatures at Lower Granite were about 17 degrees C. on July 1, Wagner said; this year, the July 1 water temperature was 20 degrees, which means the entire graph probably needs to be shifted upwards.

Wagner and Martin spent a few minutes debating this point; ultimately, Martin observed that the most recent long-term forecast calls for slightly above-average temperatures in the Snake/Clearwater River basins during July and August.

Martin noted that the number of days in which a water temperature of 20 degrees C would be exceeded look fairly similar between both plans, according to Yearsley's model runs; the only difference is that, while there would be fewer days of exceedence under salmon managers' plan, the magnitude of the exceedence would be significantly greater under the salmon managers' plan. He added that he will email this information to Rudd Turner, who will then post it to the TMT website.

One other concept – flow, said Nielsen. What we tried to do in this week's spreadsheet is to model both the salmon managers' and the Nez Perce proposal, Henriksen said. She went briefly through what the current spreadsheet shows under the salmon managers' SOR 2000-25, as well as under the Nez Perce SOR, based on what we knew at the time. Under the latter proposal, she said, Dworshak would end up at elevation 1537 feet on August 31, with an average flow at Lower Granite during the June 16-August 31 period of 36 Kcfs. Under the salmon managers' proposal, seasonal average flow at Lower Granite would be about 39 Kcfs.

Do you have any estimates of flow at Lower Granite in September? Pettit asked. Not at this time, Henriksen replied – we don't know what Brownlee operations will be, and the RFC hasn't given us any estimates of September flows as yet.

So where does that leave us? Silverberg asked. With respect to current system conditions, said Wagner, I have been asked what is NMFS' basis for operations at Lower Granite. They are based on survival study results from the last few years, and what these results show is that, as flow decreases, survival also decreases. As flows at Lower Granite near 40 Kcfs, survival spirals down toward zero, Wagner said. The other piece of information is temperature; these data indicate a similar trend, with survival decreasing as temperatures increase. Typically, we see that 20 degrees C. is the point at which survival dwindles to less than 10%. Obviously, said Wagner, what we want to see is the highest possible flows and the lowest possible temperatures. According to Billy Connor's work, we want to keep temperatures near 17

degrees for as long as possible; they reached 17 degrees in the Snake about two weeks ago, and subsequently, Connor has seen no fish in his study area, indicating that these fish have already begun to move out of the system.

Basically, where we are right now is that the majority of the run is in the reservoirs; temperatures are near 20 degrees C. and flows are well below 40 Kcfs – not the best of situations to be in, said Wagner. Turner noted that there isn't a great deal of information about survival at flows of less than 40 Kcfs in the Snake River. Obviously, if we can bring flows up over 40 Kcfs, that would be a wise thing to do, from a management standpoint, said Nielsen.

I don't have a problem with the notion that lower flows are bad for fish, said Statler; however, we have bad flow conditions now, and you indicated earlier in today's meeting that you're seeing some of the best SARs in recent history. Wagner replied that there is an advantage to migrating later, for the Clearwater fish. The fish that are currently in Lower Granite pool are destined for death, if we don't do something, Wagner said – they have no opportunity to seek cool-water refugia, in which to grow to a larger size and complete their outmigration at a later date.

The only other point I want to make is that the ratio of yearling to subyearling fall chinook migrants varies in the Clearwater from year to year, said Statler – we see both life-histories. Part of it is the issue of whether or not there is a negative impact to the cold-water releases from Dworshak, Wagner replied; what the most recent data show is a bimodal distribution of the Clearwater outmigration. There may actually be an advantage to the later-migrating fish, he said; we have some data indicating that the later-migrating fish enjoy a much higher smolt-to-adult return rate.

Greg Haller put up an overhead showing the criteria developed by the Nez Perce and Idaho a couple of weeks ago, to compare the two SORs that are currently on the table:

	NPT/Idaho Plan	Salmon Managers' Plan
# of days above 20 degrees C	20	4
TDG waiver?	No	No
Supports both juveniles and adults?	Yes	No
Reservoir <1520?	No	Yes
Meet flow target?	No	No
Clearwater fall chinook rearing	Yes	No
DNFH Impacts	No	Yes

There are other criteria you could use, based on which side of this issue you're on, Haller said; the bottom line is that, under these criteria, the NPT/Idaho plan is a winner on five of these biological criteria, while SOR 2000-25 is a winner on only two. We didn't put recreation on this list, although it may be appropriate to do so, since it is a consideration at other reservoirs, Haller said.

Is it part of the plan to draft Dworshak below elevation 1520? Silverberg asked. There has been some talk, said Wagner; part of the problem is that we have little hard information on the effects of September flows on the adult migration. Some of the information that is available suggests that 21 degrees is the point at which a thermal block occurs in the adult migration; however, the bottom line is that we know next to nothing about adults, other than the common-sense fact that cooler temperatures are better. It would be best if we had some better information on which to base the tradeoff between operations for juvenile and adult migrants; one of the things that has been discussed is drafting Dworshak an additional 20 feet, in order to conduct an evaluation of the impacts of this additional water on adult migrants, Wagner said. Our modeling shows that drafting Dworshak to elevation 1500 would have a significant benefit, in terms of water temperatures in August and September; it would have surprisingly little impact on the probability of reservoir refill. If we had information showing that providing additional flow in September had a measurable biological benefit, then we would be much more willing to consider changing how Dworshak is operated in the future, Wagner said – frankly, we're having a tough time with this issue right now.

So your proposal is to draft Dworshak another 20 feet, and evaluate the effects of that additional draft? Silverberg asked. That was a proposal at our June 6 meeting, said Wagner; we're not proposing it as a new operation at this time, however – we understand it is a very sensitive issue here. You're looking to add, through the evaluation, real

information to your toolbox? Silverberg asked. That's correct, said Wagner.

I think our plan would have facilitated that, said Haller – that's why we wanted to leave 200 KAF in Dworshak after August 31. That water isn't just for adults – it's for juveniles and adults. The goal was to accomplish that evaluation within the 80-foot draft specified in the BiOp. Would that be enough volume to conduct this evaluation?

This is a tough year to move water later in the season, said Wagner – when we began the season, I asked Cindy what she thought flows would be at Lower Granite during the first week in July; she said about 80 Kcfs. Flows are actually less than 40 Kcfs, which makes it very difficult to even think about holding back water that could be used to increase flows in the Lower Snake now. However, last year, the flow situation was much better, and we heard the same argument, Haller observed.

It sounds, then, as though there is a proposal to draft Dworshak below elevation 1520 feet this year, said Henriksen – who is making that proposal? NMFS, after talking to IDEQ and the Nez Perce Tribe, Wagner replied. It is an issue that has been brought up in consultation; we basically said, here's a thought, said Wagner – in my view, as a representative of NMFS, this is not the proposed future operation of the project – operate to 1500 on an annual basis. However, I think there would be some value to doing this operation for one year, he said.

So who is making this recommendation then? Henriksen asked. It's not an SOR at this point, Wagner replied; NMFS has, however, made a recommendation that it be done, if not this year, possibly next, for study purposes. I would point out that at the June 20 FPAC meeting, we did discuss this issue in depth, and reached tentative agreement, said Nielsen.

Statler said the Nez Perce Tribe is in no way in favor of this proposal. Also, given extraordinarily low flows in the mainstem this year, and the weather forecast showing higher-than-normal temperatures in the late summer period, it would be hard to argue that some of the Dworshak water should not be reserved for use in September, Statler said.

To try to get some closure on this, said Pettit, perhaps waiting a year might be prudent – for one thing, we don't even know whether the depth-sensitive temperature tags will work. Second, he said, to move toward an end-point to this discussion, I listened with a great deal of interest to Kyle's weather presentation; it looks as though, at least for the next week, the weather will be cool, and water temperatures should moderate somewhat. Given the fact that we're still seeing good fish movement, he said, I would propose that we continue the current Dworshak operation for the next week.

Wouldn't that push more fish into the late summer period? Michelle DeHart asked. All I can say is that we're seeing record passage numbers at the project, currently, Pettit replied – I would suggest that continuing the current operation would leave us greater flexibility later in the season. I would second that, said Haller; I would further suggest that we look first to Brownlee for increased flows. Frankly, he said, Idaho Power's recreation-based limitation of 1 foot per day isn't flying in the face of our biological criteria.

So you're suggesting that we continue to release 6.5 Kcfs from Dworshak next week? Nielsen asked. Correct, Pettit replied. What will that do to the flows at Lower Granite shown in the spreadsheet? Nielsen asked. It would probably give us a week-average flow of 34 Kcfs-35 Kcfs next week at Lower Granite, Henriksen replied.

I would agree that it would be nice to get some additional water from Idaho Power, as long as Brownlee water temperatures are acceptable, Yoshinaka said. Ningjen Liu said IPC has a one-foot-per-day draft limit at Brownlee, due to recreation and, to a lesser extent, bank stability concerns. What about, say, two feet per day? Haller asked. That would exceed hydraulic capacity at Hells Canyon, said Scott Bettin. True, said Liu – we have some units out. Tom Lorz noted that Hells Canyon water temperatures are currently about 64 degrees.

Henriksen reiterated that Brownlee is currently releasing 17 Kcfs, and drafting at a rate of one foot per day – how long do you expect that to continue? she asked. Until about July 30, Liu replied – at that point, the water will run out. We expected that water to run out about July 18, Henriksen noted – that would make a difference to expected Lower Granite flows later in July. The bottom line is that we will be drafting Brownlee to elevation 2047 this year, said

Liu – at that point, all of the federal water will be shaped, and we will be passing inflow.

So what is the maximum outflow, from Brownlee, currently? Henriksen asked. We might be willing to go as high as 24 Kcfs-25 Kcfs, Liu replied. That would be an additional 7 Kcfs from Brownlee, Nielsen noted; that, plus maintaining the 6.5 Kcfs from Dworshak, would give us something that would be pretty close to what's shown in the "Lower Granite Flow" column on the current spreadsheet. If that water is available from Brownlee, I would definitely prefer to use that Brownlee water now, while temperatures are cool, Nielsen added.

So the next big question is, is IPC willing to draft more than a foot per day from Brownlee? Nielsen said. I can't give you a formal response today, Liu replied, but you can always send us a formal request – we would need such a request in writing. Isn't the FERC project maximum draft 1.5 feet per day at Brownlee? Wagner asked. I'm not aware of that, Liu replied.

Nielsen noted that, under both SOR NPT-1 and SOR 2000-25, Dworshak is scheduled to be releasing 14 Kcfs beginning July 17. Liu noted that BPA will have to replace any energy lost if Brownlee is drafted more than one foot per day; that is one additional consideration. Basically, said Bettin, there is a balancing act between what you can physically do, in drafting the project more than one foot per day. In response to another question, Bettin noted that the earliest this operation could be implemented would probably be this weekend, because of pre-scheduling concerns. Again, we would need a written proposal before we could give you a formal response, Liu added.

Are people interested in following through on this idea? Silverberg asked. There was general agreement that there is interest among the TMT members in doing so.

In response to a question from Mary Hasenoehrl of Sen. Mike Crapo's office, Wagner replied that NMFS's proposal is that Dworshak be drafted to elevation 1500. And would that be this year? Hasenoehrl asked. If the monitoring capability is there, yes, Wagner replied – NMFS would like to be sure that everyone is comfortable that the information that would come out of this test would be an adequate basis on which to make future operational decisions.

Bill Graham of the Idaho Department of Water Resources commented that IDWR, IDEQ, IDFG and the Nez Perce Tribe have collaboratively developed the Idaho SOR; we feel very strongly that this SOR is the best way to shape flows in the Clearwater and Lower Snake, and would provide the most benefit, overall, he said. IDWR got involved in the process when local citizens asked them to participate in the development of a plan for Dworshak operations; that plan is now complete, and will be sent out for public comment in about 60 days. One thing the plan really supports is the development of an IRC, which is being done by the tribe in collaboration with the state; this IRC will focus on all species and all uses of Dworshak – recreation, power, navigation, resident fish etc. Graham asked anyone interested in obtaining a copy of this plan to contact him directly at bgraham@idwr.state.id.us.

Keith Hanson of the Orofino Chamber of Commerce commented that he has resided here for more than 50 years; when the dam was constructed, residents were promised a full pool from Memorial Day to Labor Day. They were also promised recreational and transportation benefits; transport has been completely eliminated by your activities, he said, and recreation has been severely constrained. As a fisherman, he said, I have serious questions about temperature and flow; we have asked for documentation of where, exactly, this information comes from, and have not yet received it. The bottom line is that we don't put a lot of faith in NMFS' graphs, dots and lines, he said.

During the summer, water temperatures are warm in the Selway, the Clearwater, the Lochsa and the Snake, said Hanson; in the past, water temperatures during the late summer period routinely exceeded 20 degrees C, and the fish not only dealt with it, but thrived. I guess what I would like you to ask yourselves is, is the damage you've caused to local residents worth creating what is, in essence, an artificial situation? Please keep the local residents in mind when you make your decision, he said.

Dennis Harper went briefly through his own background; he noted that he had brought suit against NMFS in 1995. He said he is disturbed that there is no Idaho representative on the TMT, then discussed the environmental and economic impacts of Dworshak operations; possible modifications to Brownlee Reservoir; the desirability of returning the Clearwater and Lower Snake to a more natural hydrograph; the impacts of Caspian tern, seal predation and

commercial fishing on migrating salmonids; the effects of ocean conditions and overfishing. We have asked for specific information about how many fish Dworshak operations are saving, and how much it's costing to save them, he said.

The last time I checked, in this country, the government is supposed to be for the people, said Harper. I believe in the system we have; this is not the system I believe in, what I've seen in this room today. The problem is, if you're not being paid to do this, you're not listened to, in this process, Harper said; in my view, NMFS should go back to the ocean. You're killing us, bottom line, said Hanson.

Thank you for coming, said Silverberg – it is very helpful to get this kind of input.

After a break, Silverberg reminded the group that Steve Pettit had proposed that the current Dworshak operation remain in place for another week, because environmental and fish passage conditions appear to make that 6.5 Kcfs discharge from Dworshak feasible. There was also some discussion of increasing Brownlee discharge to 24 Kcfs, she said; there was a caucus among the downriver folks who signed SOR 2000-25 during lunch. We talked about the ramifications of Steve's proposal, said Nielsen, as well as the potential increase from Brownlee; looking at the number of fish at Lower Granite, and the current temperature and flow situation, where we wound up as a group – ODFW, USFWS, NMFS and WDFW – is that we want to proceed with SOR 2000-25 as written. That means increasing Dworshak outflow to 10 Kcfs beginning tomorrow, Nielsen said.

Wagner added that, when Pettit made the proposal, there was some confusion about whether the additional draft from Brownlee would be in lieu of, or in addition to, increased outflow from Dworshak. More than one foot per day from Brownlee would be desirable, Wagner said; you will recall that Billy Connor recommended that Brownlee outflow be increased to 30 Kcfs beginning in late June.

Pettit said his original alternative wasn't based on an increased flow from Brownlee, although he agreed that would be desirable. So now you want that, plus the increase in Dworshak outflow? Haller asked. Yes, Wagner replied – if we could get that, that would be fine. Basically, we're well below the seasonal flow target, and anything we can do to get closer to the seasonal flow target of 51 Kcfs during the peak of the migration is desirable.

Still, if the peak is occurring at Lower Granite right now, doesn't that lessen the need? Haller asked. What I reported earlier is that only 12% of the wild run has passed Lower Granite, Wagner said – the system is set up to manage for wild fish, after all. Silas Whitman noted that you can't continue to rely on Dworshak and the Clearwater to fix the situation that has been artificially created; this operation is not consistent with the needs of the Clearwater fish.

Haller noted that Idaho Power gets off scot-free every year; he suggested that it is time for them to contribute to this fix as well. If the run is happening under the poor conditions you've described, how can you justify what you're now proposing? Haller asked – conditions are only going to get worse.

We have a sincere desire to reach a mutually-agreed-upon operation, said Wagner. I don't see any movement on your part, said Haller – all I'm hearing is that you're willing to take the additional water from Brownlee, but you still want the full draft from Dworshak. Why is it that Idaho Power can say no to these types of requests, but we get overridden? We've been trying to reach agreement on the 2000 operation at Dworshak since last winter, Wagner replied – again, we want to reach an agreed-upon operation. To do that, we need to take all of the information we have on what provides the best conditions for the fish we're managing for, and set that aside. Those fish are fine right now, said Haller. They're not dying now, but if we don't take action now, the flow and temperature situation will only continue to decline, said Wagner. What the data are telling us to do is conflicting with what we would like to do, from a process standpoint, Wagner said, which is reach a mutually-acceptable operation.

Statler expressed support for Pettit's proposal, as well as for the increased draft from Brownlee – that would help maintain a better temperature regime for the Clearwater fish rearing below the dam, he said. I guess the way I interpret Steve's proposal, and your contention that it will help the Clearwater fish grow more quickly, is that it will encourage those fish to outmigrate during August, when migratory conditions and SARs are at their worst, said Wagner – I would suggest that it would be more beneficial for those fish to outmigrate in September and October, when SARs are demonstrated to be much better.

Obviously this is a very complex issue, said Silverberg; however, given our time constraints today, perhaps it's time to do a reality check. Obviously everyone is very frustrated today; there are a large number of constraints that are hampering our ability to reach an agreement that works for everyone.

Graham reiterated his belief that there are biological benefits to be had by holding a portion of the Dworshak water to release in September. Another local participant observed that NMFS is not very responsive to local needs – we have a break in the weather, he said; we have a rational proposal that would leave some additional water in Dworshak, at least for the next week. The response, from NMFS, is that we'll have our cake, and take a little ice cream, in the form of the additional release from Brownlee, and eat it all, he said. That's not very responsive to our needs – there is no consideration of our desires, only a suggestion that we draft Dworshak an additional 20 feet. I'm frustrated, he said, and I guess that shows.

To say that I haven't heard what you've said about the local impacts of the Dworshak operation, and the desires of the local population, simply isn't true, said Wagner. It would be nice if we could find a long-term solution to this situation, one that works for everyone involved. However, we have a mound of data that says the lower flows are, and the higher temperatures are, the more fish we kill. We don't have that information on adults, said Wagner, hence our reluctance to accept the proposal to save some of this water for adults, and our suggestion that we draft an additional 20 feet from Dworshak. We're not dealing with cake and ice cream here, said Wagner; we're dealing with crumbs and an empty can. Again, the migration is at its peak, and the fish are doing fine, said Haller. We had a report from the project last Monday that the fish at Lower Granite were showing signs of thermal stress, said Wagner. And it wasn't serious, said Haller. At the time, said Wagner, but the situation is only going to get worse.

Henriksen noted that the Corps has no plans to draft Dworshak any lower than elevation 1520 feet this year; we haven't even seen a study proposal, at this point, for drafting Dworshak to elevation 1500 this year, she said. Perhaps, then, we should concentrate on what we're going to do over the next week, said Silverberg. We also need to talk about a longer-term operation – that's the point of this meeting, I thought, said Martin.

If we accept SOR 2000-25, said Statler, there will be no water left in Dworshak to help adult migrants, as well as the 40% of the Clearwater subyearling migration that migrates after August 31. That is not acceptable to the Nez Perce Tribe. With a SAR of 1.88, I wouldn't call that writing those fish off, Wagner replied. Yes, but look at the temperature problems you're creating for those fish, said Statler – you still have to get them from Point A to Point B. The fact is, we don't know what paradigm is best for those fish, he said.

Is there any opportunity for a different proposal at this point? Silverberg asked. I think we're pretty much at loggerheads, said Yoshinaka; we feel the operation in SOR 2000-25 will protect the largest number of fish. We're trying to weigh the needs of the greater part of the population, he said; I'd like to protect every fish, if we could, but sometimes you just can't.

The tribe is not willing to accept status quo, said Silas Whitman. The area of influence is the ESU, which we objected to. However meaningless the 5% of the total population may be to you, they are very important to the Nez Perce people. We have to try to protect the resources in the Clearwater River, because that is our home river. We're not responsible for the designation of these populations, or for creating the conditions that affect them, Whitman said. We have never been mitigated for the impacts of the construction of Dworshak Dam; this is just one more brick in the wall.

How does this proposed operation comply with your treaty trust responsibilities to the Nez Perce Tribe? Martin asked. Our responsibility is to rebuild the runs to a healthy, harvestable level, Wagner replied – I'm sorry that we have a difference of opinion as to how to achieve that. It's more than a difference of opinion, said Haller – it's a major disagreement. This is just another example of why the tribes pulled out of the Regional Forum process in 1997, said Haller – consultation means more than just listening to our concerns.

Does this issue need to go to IT tomorrow, and if so, do we need to take some time to frame this issue? Silverberg asked. I'd need to check with Ed Bowles, said Pettit -- we're at the same place we were last week. Bowles replied that, in his view, water temperatures aren't currently a problem; rather than making a long-term decision now,

he would prefer to elevate the issue to IT, expressing Idaho's desire to maintain Dworshak outflow at 6.5 Kcfs for another week.

After a few minutes of further discussion, the issue was framed for the IT as follows:

"Given the air and water temperatures currently in Idaho, should the region continue with the Dworshak operation developed by the IT last week (6.5 Kcfs outflow from Dworshak) for one more week, in order to maintain greater flexibility later in the season, or should Dworshak outflow be ramped up to 10 Kcfs on July 7, and 14 Kcfs on July 10, as requested in SOR 2000-25? Also, TMT is requesting additional water from Brownlee (up to 1.5 feet of draft per day) for one week, to help offset low flow and temperature conditions."

Wagner said he will contact Idaho Power to check on the feasibility of the additional draft from Brownlee; in the meantime, it was agreed to request an IT conference call to address the Dworshak issue for 10 a.m. tomorrow, July 7.

VII. Next TMT Meeting Date.

The next meeting of the Technical Management Team was set for Thursday, July 13, from 9 a.m. to noon at the Corps' Northwestern Division Headquarters in Portland. Meeting notes prepared by Jeff Kuechle, BPA contractor.

TMT ATTENDANCE LIST

JULY 6, 2000

Jacqueline Abel	Facilitator	503/282-5920
Eric Barker	Lewiston Tribune	208/743-9411
Jim Bellatty	IDEQ	208/799-4370
Scott Bettin	BPA	503/230-4573
Kim Fodrea	Reclamation	503/872-2802
Bill Graham	IDWR	208/327-7966
Greg Haller	Nex Perce Tribe	208/843-7368
Keith Hanson	Orofino Chamber of Commerce	208/476-5536
Dennis Harper	Orofino Chamber of Commerce	208/476-3158
Mary Hasenoehrl	Sen. Mike Crapo's office	208/743-1492
Cindy Henriksen	COE	503/808-3945
Christine Mallette	ODFW	503/872-5252 x 5352
Kyle Martin	CRITFC	503/731-1314
Sandy Medley	Orofino Chamber of Commerce	208/476-4335
Bill Miller	USFWS	208/476-4591
Jim Nielsen	WDFW	360/902-2812
Erik Petersen	COE	208/476-1258
Steve Pettit	IDFG	208/799-3475
Valerie Schatz	Con. Helen Chenowith-Hage's	208/746-4613

	Office	
Ed Schriever	IDFG	208/799-5010
Donna Silverberg	Facilitator	503/248-4703
Mary Lou Soscia	EPA	503/326-5873
Dave Statler	Nez Perce Tribe	208/476-7417
Scott Turlington	Sen. Larry Craig's Office	208/743-0792
Paul Wagner	NMFS	503/231-2316
Marv Yoshinaka	USFWS	360/696-7605

On Phone:

Name	Affiliation	Phone
Ruth Abney	COE	
Ed Bowles	IDFG	
Scott Boyd	COE	
Dick Cassidy	COE	
Michele DeHart	FPC	
Richelle Harding	D. Rohr & Associates	
Tim Heizenrater	ENRON	
Jim Litchfield	Montana Consultant	
Ningjen Liu	Idaho Power	208 -388-2255
Tom Lorz	CRITFC	
Pat McGrane	Reclamation	
Mike O'Bryant	Columbia Basin Bulletin	
Glen Traeger	Avista Energy	
Rudd Turner	Corps of Engineers	(503) 808-3935
Maria Van Houtentd>	ENRON	

TECHNICAL MANAGEMENT TEAM

BOR: Kim Fodrea\Pat McGrane

NMFS: Paul Wagner\Chris Ross BPA: Scott Bettin\Robyn MacKay

USFWS: Marv Yoshinaka\Bob Hallock\Susan Martin

OR: Christine Mallette \Chuck Tracy WA: Jim Nielsen ID: Ed Bomles\Steve Pettit

MT: Jim Litchfield COE: Cindy Henriksen\Rudd Turner\Dick Cassidy

COLUMBIA RIVER REGIONAL FORUM

TECHNICAL MANAGEMENT TEAM MEETING NOTES July 13, 2000

**CORPS OF ENGINEERS NORTHWESTERN DIVISION OFFICES – CUSTOM HOUSE
PORTLAND, OREGON**

TMT Internet Homepage: <http://www.nwd-wc.usace.army.mil/tmt/>

DRAFT

FACILITATOR'S NOTES ON FUTURE ACTIONS

Facilitator: Donna Silverberg

The July 13th meeting was conducted by conference call.

The following is a list of items the Technical Management Team (TMT) discussed at its last meeting that will require future action or discussion.

Minutes & Facilitator's Notes:

The minutes were not available for review. They will be posted on the TMT web page when the COE receives them.

Snake River Summer Operations

Cindy Henriksen reviewed the operation as determined at last week's IT meeting. Water temperature of 68° F was recorded at Lower Granite on Saturday and flows out of Dworshak reservoir were increased, reaching 13.5 Kcfs by Wednesday. The COE is watching the gas levels and may adjust the flow slightly when necessary.

Paul Wagner requested that water for the spill be taken from a lower elevation to retain the more nutrient rich surface water.

Marv Yoshinaka passed on the observations that the fish in the hatchery were off their feed because of cool water temperatures, and requested that the temperature be raised to 48° F.

ACTION: The COE will check with the project to see if taking water from a lower elevation is possible and if so, make the adjustment. The COE will also do their best to accommodate the request for 48° F water.

Current System Conditions

Reservoir operations: Cindy gave updates on Libby, Dworshak, and McNary. Kim reported on the upper Snake system and Hungry Horse, and Ningjen on Brownlee and Hell's Canyon.

TDG: Dick Cassidy focused on the lower Columbia in his TDG update. The gas levels at Camas/Washougal are just under 115%.

Fish migration: Paul Wagner gave the update on passage for sub-yearling chinook. The run of wild fish at Lower Granite appears to be around halfway through, with the caveat that the estimate has large error bounds. The number of fish at McNary are still high but reduced from earlier numbers. The estimate is that about one third of the run is completed. Paul noted that the mortality is less than last year and the fish look pretty good.

A question was raised about the possible impact of loss of refrigeration on transported fish during a planned 6-hour power outage at Little Goose.

ACTION: The COE will check on this and if necessary, will look at possible alternatives. The COE expects to send a report by email to TMT members on Thursday afternoon.

Recommended Operations

There were no System Operation Requests to consider. However, during the meeting NMFS did request that the draft at Grand Coulee be held to no more than 1 ft. next week with 165 Kcfs at McNary for the week ending July 23rd. This was agreed to.

Idaho Power mentioned a probable need for change in the planned operation at Brownlee and requested a review of an energy exchange agreement it has with BPA.

ACTION: NMFS will review the operations for Brownlee with Idaho Power and BPA, and the terms and requirements of the energy exchange agreement.

Next Meeting and Agenda

The July 20th TMT meeting will be by conference call, unless the salmon managers request a gathering as a result of their FPAC meeting.

Agenda items:

- Update from the salmon managers on Idaho Power's request regarding Brownlee flows in August.
- Review of BPA/IPC contract stipulations.

Meeting Minutes:

I. Greeting and Introductions

The July 13 Technical Management Team meeting, held at the Custom House in Portland, Oregon, was chaired by Cindy Henriksen of COE 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.

Silverberg welcomed everyone to the meeting, then led a round of introductions and a review of the agenda.

II. Review of Minutes from July 6 TMT Meeting.

It was noted that the minutes from this meeting are not yet available, due to technical difficulties.

III. Snake River Summer Operations Update.

Henriksen said she had reviewed current operations at yesterday's IT meeting; there was also an IT conference call last week, at which it was agreed to increase outflow from Dworshak to full powerhouse capacity, 9.4 Kcfs, on Friday, July 7. During that call, it was also agreed to increase Dworshak outflow to the 110% TDG limit if temperatures at the Lower Granite forebay fixed monitoring station exceeded 68 degrees F. That was done last Saturday, Henriksen said; Dworshak outflow was ramped up to 12.5 Kcfs, after the temperature was checked. We weren't quite at 110% TDG, she said, so Dworshak discharge was increased to 13.3 Kcfs on Monday, July 10; after the resulting gas levels were checked, it was increased again to 13.5 Kcfs yesterday.

Is there any opportunity for spill to come from the selector gates? Paul Wagner asked. We're trying to maintain a temperature of 47 degrees, said Henriksen; the water comes from very deep in the reservoir, and we've left how they achieve that target temperature up to the project's discretion. The concern is reservoir productivity, said Wagner; the surface is the more productive zone, and the feeling is that if we take the deeper water, that will have less of a limnological effect.

Marv Yoshinaka said Bill Miller at the Dworshak complex had called him to request a 48-degree temperature, because the fish at the hatchery have gone off feed. We'll do our best to accommodate that, Henriksen replied. In response to a question from Christine Mallette, Henriksen said that if any of the fixed monitoring stations below Dworshak, or at Peck or Lewiston, exceed 110% TDG, the Corps will reduce Dworshak outflow accordingly.

IV. Review of Current System Conditions.

Henriksen said Libby continues to release 8 Kcfs; the project is at elevation 2425 feet, and expects to continue to release 8 Kcfs through July, with the goal of reaching elevation 2439 by August 31. Grand Coulee is currently at elevation 1285 feet, said Kim Fodrea; we're still operating the project to meet a target flow of 175 Kcfs at McNary this week. Hungry Horse continues to release 6 Kcfs. On the Payette, delivery of the flow augmentation volume began on June 21 at 660 cfs; since then, the release volume has averaged 820 cfs. On the Boise, the release of the salmon water started June 19, and has averaged 275 cfs. On the Upper Snake; Milner discharge increased to 450 on June 19; by June 23, we were up to 1.5 Kcfs at Milner, and have maintained that rate of discharge since then, said Fodrea.

Ningjen Liu reported that Brownlee began drafting 1.5 feet per day on Tuesday, July 11, as per last week's IT call. That operation is being re-evaluated on a daily basis, he said, based on BPA's ability to deliver replacement power. Outflow from the Hells Canyon Complex is currently 20 Kcfs.

At Dworshak, I've already reported flow, said Henriksen; inflows are receding, and the current project elevation is 1591 feet. Last week's average flow was 38 Kcfs at Lower Granite, and 173.6 Kcfs at McNary.

Dick Cassidy reported that most spill is occurring at the Lower Columbia projects; at Bonneville, spill has been occurring 24 hours a day. The Corps has been able to stay within the 115% TDG limit at Camas/Washougal during the past week.

On the fish migration front, Paul Wagner said most of the attention, currently, is focused on the subyearling migration; we're still seeing good numbers at most projects, he said. At Lower Granite yesterday, the index was 15,900, so we still have considerable numbers passing that project, he said. PIT-tag numbers are receding from a high of 40 in late June; we saw seven PIT-tagged fish yesterday at Lower Granite, Wagner said. The forecast suggests we're at about the halfway point in the wild run, he added.

At McNary, we're still seeing good numbers of subyearling migrants, although yesterday's index of 112,000 is down from the peak of 335,000, which was seen on July 8, Wagner continued. The forecast at McNary suggests we're about a third of the way through the run; the cumulative passage graph, however, suggests that we're at the 80% total run point, said Wagner. Mortality is considerably less at McNary this year than it was last year; fish condition looks good so far.

I had a question about an upcoming operational event – a power outage at Little Goose for 6-8 hours, which means there will be no refrigeration, said Margaret Filardo. Given current temperature conditions, she said, should we

bypass during that outage, rather than continuing to collect and transport? Rudd Turner replied that Units 1-4 will be out during 0600 – 1200 hours on Monday, July 17, for a line switch and transformer work. We'll check to see if that will have an effect on other station service, Henriksen said. We'll talk to the project and send an email to TMT members later today, Turner said.

V. New SORs.

No new System Operational Requests were submitted prior to today's meeting.

VI. Recommended Operations.

Henriksen said the headwater projects are operating according to what was said previously; the only other project to discuss is Grand Coulee and the resultant flow at McNary. Flows at Lower Granite will be what they are as a result of Dworshak and Brownlee operations, Henriksen said. At IT yesterday, we discussed interim draft limits on August 31, the main question is how to shape the available water between now and August 31. Our expectation is that Grand Coulee will fill slightly over the next week, given a week-average flow of 175 Kcfs, said Wagner – we don't want to draft Grand Coulee significantly this week, but perhaps by one foot or so, resulting in a flow at McNary of 165 Kcfs – is that a reasonable expectation? So is drafting Grand Coulee by one foot the goal, or is it the 165 Kcfs flow target at McNary? Fodrea asked. 165 Kcfs, Wagner replied. That sounds doable, said Fodrea – that's one foot down from our Sunday night elevation. Yes, Wagner replied. And if Grand Coulee fills slightly, that's OK? Henriksen asked. Yes, Wagner replied.

Liu asked about the August spreadsheet operation at Brownlee, which shows 10.8 Kcfs average outflow. We're considering two options, he said – to go to 6.5 Kcfs out, plus the pass-through water from the Bureau, which will get us to about 9 Kcfs, rather than passing inflow, because we will need power in August. That would be a difference of about 1 Kcfs, he said, because at that level, under our contract, we would receive energy back from Bonneville. That would begin at the end of July, he added, once we finish our fish delivery. So you're asking the salmon managers what they think about that potential operation? Silverberg asked. Yes, Liu replied. Yoshinaka said the salmon managers did not discuss this change in operation at Tuesday's FPAC call; he said they will review the contract and discuss this issue between now and next Thursday's TMT meeting, and will report back at that meeting. At Dan Daley's request, it was agreed to add a review of the contract stipulations to the agenda for that meeting.

VII. Next TMT Meeting Date.

The next meeting of the Technical Management Team was set for Thursday, July 20, at the Corps' Northwestern Division headquarters. It was agreed that this meeting will be a conference call. Meeting notes prepared by Jeff Kuechle, BPA contractor.

TMT ATTENDANCE LIST

JULY 13, 2000

Scott Boyd	COE	503/808-3943
Dick Cassidy	COE	
Tim Heizenrater	ENRON	
Cindy Henriksen	COE	503/808-3945
Patricia McCarty	Facilitator	
Kevin Nordt	PGE	
Donna Silverberg	Facilitator	
Rudd Turner	COE	503/808-3935

On Phone:

Name	Affiliation	Phone
Teddy Baker	American Electric Power	
Dan Daley	BPA	
Margaret Filardo	FPC	
Kim Fodrea	Reclamation	
Phillip Freeman	Seattle City Light	
Steve Hemstrom	Avista Utilities	
Dusica Jevremovich	FPC	
Jim Litchfield	Consultant (Montana)	
Ningjen Liu	Idaho Power	
Christine Mallette	ODFW	
Kyle Martin	CRITFC	503/731-1314
Steve Pettit	IDFG	
Maria Van Houten	ENRON	
Paul Wagner	NMFS	
Marv Yoshinaka	USFWS	

TECHNICAL MANAGEMENT TEAM

BOR: Kim Fodrea\Pat McGrane

NMFS: Paul Wagner\Chris Ross **BPA:** Scott Bettin\Robyn MacKay

USFWS: Marv Yoshinaka\Bob Hallock\Susan Martin

OR: Christine Mallette \Chuck Tracy **WA:** Jim Nielsen **ID:** Ed Bowles\Steve Pettit

MT: Jim Litchfield **COE:** Cindy Henriksen\Rudd Turner\Dick Cassidy

COLUMBIA RIVER REGIONAL FORUM

TECHNICAL MANAGEMENT TEAM

MEETING NOTES

July 20, 2000

**CORPS OF ENGINEERS NORTHWESTERN DIVISION OFFICES – CUSTOM HOUSE
PORTLAND, OREGON**

TMT Internet Homepage: <http://www.nwd-wc.usace.army.mil/TMT/index.html>

DRAFT

TECHNICAL MANAGEMENT TEAM

RE: July 20, 2000 Conference Call

FACILITATOR'S NOTES ON FUTURE ACTIONS

Facilitator: Patricia McCarty

The July 20th meeting was conducted by conference call.

The following is a list of items the Technical Management Team (TMT) discussed at its last meeting that will require future action or discussion.

Minutes & Facilitator's Notes:

The minutes from the July 6th and 13th meetings were available for review on the TMT web page. In the future, review of the minutes will not be a regular agenda item. The minutes will always be posted on the TMT web page when the COE receives them. Rather than the COE making paper copies for everyone and distributing the copies at the meeting, members will review the

minutes prior to the meeting and the minutes will be discussed only if someone requests a change.

Brownlee Operation Update

The salmon managers presented SOR 2000-26, requesting continuance of the current operation at Brownlee into August. Because the request was beyond the BPA/IPC agreement the terms of that agreement were not discussed. Nengjin Liu requested a formal letter from Oregon to continue the flows, and an opportunity to discuss the proposal within IPC before giving a response.

ACTION: Christine Mallette will work with IPC on the letter. Nengjin will report on IPC's response at the next meeting.

McNary Summer Operations and Temperature Test

Oregon DEQ, Washington DOE and CRITFC submitted a request for test operations to reduce temperatures in the juvenile bypass system. Earlier this week a conference call on this request resulted in an agreement on the proposed operation that varies somewhat from the proposal. The agreement will be posted on the TMT web page. The COE clarified that the purpose of the test is to see how effective this operation is in lowering water temperatures, and though there may be some biological data gathered, the focus is on temperature in the juvenile fish facility. To avoid spill when feasible in light of the forebay restrictions on the weekends during the test, the COE will authorize, on an as-needed basis, the operation of the north powerhouse units 11-14 outside of 1% peak efficiency, halfway to full powerhouse overload. The test will begin this Saturday.

ACTION: The COE will have a conference call on this test next week, and at that time, it will determine the best place to post the test results. Rudd Turner will report on the temperatures at McNary at the next TMT meeting.

Dworshak Operations

Cindy Henriksen reported on the change in spill at Dworshak. The spill is now through the Regulating Outlets, total project outflow remains near 48° F, with the flow at 12.3Kcfs, to stay within the TDG standard. This change was implemented Friday, July 14th.

Current System Conditions

Libby operations – Libby is still releasing 8Kcfs and will continue to do so. There was acknowledgment that the reservoir may miss refill by more than the earlier projections. Montana will continue its internal discussions about its needs in August and September and will report back to TMT. In the sturgeon larval studies, sampling will continue to the end of July.

The BOR and the COE gave updates on the conditions at their projects. Dick Cassidy, from the COE, reported on TDG. Spill at Bonneville will be increased because the TDG level has dropped below 115%. Temperature data on Dworshak and Lower Granite is available by links on today's agenda on the TMT web page. In response to a question about the placement of gauges, Dick Cassidy looked up the distance of the gauges from Dworshak. He did not get a chance to share that information while the call was in session. Here's what he found: The Peck gauge is 4.9 miles from Dworshak dam, and the Lewiston gauge is 38.3 miles from the dam.

Paul Wagner gave an update on fish migration. The numbers are still good at Lower Granite, although it appears the run is past its peak. The numbers for wild fish seem to indicate that around two-thirds of their run is past.

Recommended Operations

The SOR's on Brownlee and McNary are covered above. The salmon managers made a request for a higher flow than is projected for McNary for the week ending July 30th. After discussion, it was agreed that flows will remain as indicated on the COE spreadsheet – 155Kcfs for the week ending July 30th.

Next Meeting and Agenda

The July 27th TMT meeting will be by conference call.

Agenda items:

- Update on McNary Temperature Test
- Response from IPC on SOR for Brownlee
- Discussion of planned field trip to Pierce Island on August 3rd.

I. Greeting and Introductions

The July 20 Technical Management Team meeting, held at the Custom House in Portland, Oregon, was chaired by Cindy Henriksen of COE and facilitated by Patricia McCarty. 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.

McCarty welcomed everyone to the meeting, then led a round of introductions and a review of the agenda.

II. Review of Minutes from July 6 and July 13 TMT Meetings.

The group spent a few minutes going through the minutes from the last two TMT meetings. Henriksen asked that any changes be submitted to her by close of business Friday, July 21. It was further agreed that, from now on, TMT participants will take their own copies of the meeting minutes from the TMT website, and will raise any comments or concerns about the minutes at the beginning of each meeting.

III. Brownlee Operations Update.

Paul Wagner noted that the end of the agreement covering the shaping of the 237 KAF, as well as any pre-shaping required for the 427 KAF in Upper Snake water, is at hand. We're now entering the realm where there is no formal agreement covering Brownlee operations, he said; SOR 2000-26 was written to say "don't stop," basically.

The Corps has not yet received SOR 2000-26, said Henriksen. Wagner went briefly through the contents of this SOR, which was posted to the Fish Passage Center webpage on July

18. SOR 2000-26, supported by ODFW, USFWS, WDFW, NMFS and IDFG, requests the following specific operations:

- Request that Idaho Power Company continue to draft Brownlee Reservoir through the end of August for the benefit of the subyearling fall chinook migration. The draft rate and reservoir elevation should take into consideration the ending reservoir elevation necessary to assure the provision of the minimum flow of 9 Kcfs for fall chinook migration and spawning in the fall in Hells Canyon.

This is very different from what we discussed last week, when we talked about going down to 8.9 Kcfs to implement the BPA contract, said Nengjin Liu of Idaho Power. We would need to get a letter stating that this is the official position of the States of Oregon and Idaho – ODFW and IDFG – before we can formally reply to it, he said. Christine Mallette said ODFW supports this SOR; Liu reiterated that he would like to see a formal request from the State of Oregon, so the request can be documented by IPC. Recreational users of the reservoir don't always understand the reasons we do things, he said, hence the need for documentation. Once the official request is received, he said, we can evaluate our ability to accommodate it, and our ability to return to elevation 2059 by the end of September.

Part of Idaho Power's agreement with BPA specifies that providing flows for the subyearling migration is supposed to be revenue-neutral, said Wagner. True, said Liu; after the delivery of the Upper Snake water, IPC is entitled to receive power back from BPA. However, Hells Canyon outflow has to be 6.5 Kcfs plus the pass-through water, which means IPC needs to release 8.9 Kcfs from Hells Canyon in order for the agreement to take effect, Liu said. That probably won't happen until some time in September, said Scott Bettin – your discharge will be too high to allow us to return that energy. We plan to comply with the contract provisions, said Liu. In that case, we'll give you the energy, said Bettin.

Henriksen said it was her understanding that NMFS was going to review these contract stipulations at today's meeting – have you found some justification in the BPA/Idaho Power agreement that would allow this SOR to be implemented? she asked. No, Wagner replied – the reason this was added to the agenda is because Nengjin said, at last week's TMT meeting, that this is what IPC was planning to do. We would rather not have Hells Canyon outflow decreased right now so the energy exchange can occur, said Wagner – that's not in the interest of the fish migration.

Idaho Power is flexible on this, but the bottom line is that IPC needs this energy exchange, said Liu. We would always like to see flows higher, but we also need to get this energy exchange. You can purchase energy, said Bettin – you will also receive energy when you meet the provisions of the contract.

It sounds like this is a request for more than 427 KAF, said Henriksen. Nengjin has been clear all along that IPC will be passing inflow in August, so is this a request for more than 427 KAF? The 427 KAF was essentially Upper Snake water, Wagner replied – I don't think the Brownlee portion was ever viewed as part of that. We know IPC is going to produce their 427 KAF by the end of this month, said Henriksen; I'm trying to figure out where this water is

supposed to come from. How can we strike this deal, at the TMT level? There is no formal agreement that covers this; it falls under our ability to be flexible, in season, Wagner replied – what I'm hearing from IPC is that implementing this SOR, and continuing to draft Brownlee Reservoir, is in their interest as well, from an energy demand perspective.

This year, we're not sure we can do that, said Liu – again, we want to see an official letter from Oregon before we can make such a commitment. We need to evaluate the request, then talk to you at next week's meeting. Is it a problem to get a letter from Idaho and Oregon? Marv Yoshinaka asked. I can certainly pursue that, said Christine Mallette.

That is something of an unusual request, given the fact that both IDFG and ODFW support this SOR, noted Jim Nielsen. Our concern is recreational users in eastern Oregon, said Liu – we want additional documentation that this operation is the result of a request from the State of Oregon. So you're looking for something with the state seal on it? Bettin asked. Essentially, yes, Liu replied. I've heard Christine say she will work on that, said McCarty. Once that's received, we can get back to you as to whether or not this is doable, said Liu. I'll work internally, and with Nengjin, to make that happen. said Mallette. Can this item go on next week's TMT agenda? McCarty asked. That would be fine, Wagner replied.

IV. McNary Summer Operations and Temperature Test.

Rudd Turner said the Corps had received SOR WQ-1 earlier this week. This SOR, supported by Oregon DEQ, Washington DOE and CRITFC, requests the following specific operations:

- McNary Dam: Do not operate Units 1 and 2 daily during 1000-2400 hours, to reduce intake of higher temperature forebay water into the juvenile bypass system. Continue this operation until evaluation of temperature changes in the bypass system is complete.

We convened a conference call on Tuesday afternoon, said Turner, involving BPA, NMFS, WDFW and the Corps, as well as the co-authors of the SOR. We reviewed the current situation at McNary, and agreed that there is an opportunity, over the next few days, to implement this SOR, because of current conditions at the project. Two of the conference call participants were tasked to develop a study plan for this test; that plan has now been produced, and is available via the TMT website.

What we're proposing is that, from today through July 31, McNary Units 1 and 2 would be turned on, then shut off, on a two-day, alternating treatment basis, according to the provisions of the SOR, Turner continued. We will then monitor temperatures at several locations – the dewatering structure at the powerhouse, at the juvenile fish separator and three other locations. The monitoring data produced would be the benchmark for the evaluation of the effectiveness of this operation; we will produce a report on the effects of the operation subsequently, said Turner.

If TMT agrees this is a reasonable thing to do, we will go forward with the test, said Turner; the first Units Off configuration will occur this Saturday and Sunday. There is also a 2.5-foot forebay restriction that will make this a tight operation, for pelican nesting, said Turner. Last year, we stopped that operation in mid-July, so we may be able to remove that as a restriction. There is also a hard constraint to hold the reservoir at elevation 339-340 (the upper foot) for hydroplane racing at Tri-Cities, he said; given current flows, that leaves us near full powerhouse capacity. If flows are higher than expected, there is a possibility of some spill; we don't know that will happen, but we can't guarantee that it won't, he said.

In addition, Unit 2 is scheduled for 6-year maintenance beginning July 30, said Turner; the project is on a very tight schedule, and they don't want to delay that maintenance work. Kyle Martin asked if it would be possible to start the test tomorrow, rather than Saturday, given expected temperature conditions. BPA would not support that, from a load perspective, said Bettin. Wagner said NMFS would prefer to stick to the original schedule as well.

Have you considered operating outside 1% to avoid spill? Bettin asked. We brought it up on the conference call, but there was no support for it, Turner replied – that may be something for this group to discuss. We can also talk about when to spill, he said. There is a concern about the effects of low-level spill on predator dispersion, as well the effects of operation outside 1% on gatewell turbulence, said Nielsen. If we're at low overload, NMFS' feeling is that it wouldn't be much of a problem, said Wagner. If you're not talking about full overload, that would probably reduce that concern, Nielsen agreed. So your preference would be to operate some of the North Shore units at low overload, rather than spilling? Turner asked. Correct, Nielsen replied. It was agreed that Units 11-14 would likely be those run at low overload (a point halfway between 1% peak efficiency and full overload) during the units-off portion of the test, from noon to 10 p.m.

Is this operation acceptable to the TMT? McCarty asked. Nielsen and Wagner replied in the affirmative. In reply to a question from Mallette, Russell Harding said he has been involved in the development of this plan, and he is happy with it. Sounds like we will begin implementation of the test this weekend, said Turner.

V. Dworshak Operations.

Henriksen said that, last week, the TMT discussed changing the spill pattern at Dworshak from the spillway to the regulating outlets, to avoid withdrawing water from the high-nutrient strata of the reservoir. I worked with Dave Statler and Paul Wagner to develop a proposal to change spill at Dworshak to the regulating outlets, rather than the spillway, she said; we agreed to change all of the spill to the regulating outlets, despite the fact that the selector gates would have to be moved up closer to the surface to maintain a temperature of 48 degrees downstream. That change was made on Friday, and we've been running that way ever since, said Henriksen. There is some concern about the fact that the regulating outlets produce a slightly higher level of TDG with a smaller amount of spill; we're still examining that operation to see its effects on TDG. We're

releasing 12.3 Kcfs and trying to keep TDG below 109%, she said. That's because of IDEQ's concern about the +/- 1% accuracy of the gauges? Nielsen asked. Yes, Dick Cassidy replied. It seems somewhat capricious that IDEQ would set a standard of 110%, then ask you to manage to 109%, said Nielsen. That's an issue you should take up with IDEQ, Henriksen replied.

VI. Current System Conditions.

Henriksen said Libby continues to release 8 Kcfs; there was a flurry of activity late last week, during which we discussed the possibility of reducing Libby outflow to 7 Kcfs and having B.C. Hydro make up the other 1 Kcfs, because Lake Kookanoosa is expected to reach a maximum elevation of 2437. However, at this point, the Corps' plan is to maintain the 8 Kcfs outflow from Libby, Henriksen said. I've got the State of Montana working on a rampdown rate for September and beyond, said Litchfield; they understand what's going on. However, 20 feet down, to elevation 2439, is the maximum we're allowed to take, said Bettin. Montana understands the 20-foot draft limit, said Litchfield; they also feel that this is an extraordinary year. Basically, we guessed wrong on the forecast, said Bettin. That's correct, said Litchfield – right now, they understand what's happening, and they want to maintain 8 Kcfs. They were willing to go to 7 Kcfs if there was an Arrow swap, he said, but my understanding is that that is probably not feasible.

Is there any update on the sturgeon larval studies? Henriksen asked. They were continuing to capture eggs as of last week, Yoshinaka replied; they have also captured a few larvae from the hatchery release. Sampling will continue through the end of July, he added. Any information on fish condition? Henriksen asked. I didn't get that from Bob Hallock, Yoshinaka replied. So the decision about next year's sturgeon operation will be made at the November recovery team meeting? Litchfield asked. Correct, Bettin replied. But we won't have any information from this year's test on which to base next year's operation? Litchfield asked. Correct, Bettin replied.

Grand Coulee is at 1285 feet, and operating to meet the 165 Kcfs target at McNary, said Kim Fodrea; Hungry Horse continues to release 6 Kcfs. On the Upper Snake, Milner is still releasing 1.5 Kcfs, on the Boise, we're releasing an average of 275 cfs, on the Payette, 800 cfs

Flows at Lower Granite averaged 38 Kcfs last week, said Henriksen; the target at McNary was 175 Kcfs; observed flow was 172.5 Kcfs. The target for this week is 165 Kcfs? Nielsen asked. Correct, Henriksen replied.

On the TDG front, Dick Cassidy reported that Bonneville was spilling 24 hours a day until July 16. On July 15, we drifted a bit above the target of 120% TDG at Warrendale, he said; on the 16th, we reduced spill somewhat, and the tailwater came back into compliance. We've been adjusting over the past couple of days to get all of the stations back into compliance; we'll be adjusting spill upward later today, he said. We have been able to maintain 110% TDG at Dworshak except for a couple of brief periods,

Cassidy added. With respect to water temperatures, at Lower Granite, the Lewiston gauge shows a daily fluctuation between 56 and 58 degrees as it enters the Lower Granite forebay; at the Lower Granite forebay gauge, we're seeing temperatures in the 66-70 degree range.

With respect to fish migration, Wagner said the area of interest is still the subyearling migration. Numbers at Lower Granite are still good, but not as good as they've been – the index was 3,960 yesterday. That's still very high, compared to the historic index, said Wagner, but down from an index of 5,000 on the previous day; it appears that we've now passed the peak of the subyearling migration.

At McNary, daily subyearling chinook indices are varying between 20,000 and 59,000, Wagner continued. Wild fish numbers have been on the trailing side of things, he said; the biggest number we've seen in the past week is nine tagged fish, with the average in the low single digits. The forecast indicates that we're about two-thirds of the way through the wild run, he added. On the adult sockeye front, my understanding is that over 200 have passed Lower Granite, he added. The most recent number I've seen was from July 13, said Dusica Jevremovich – over 200 at Lower Granite.

VII. New System Operational Requests.

Henriksen noted that the new SORs were discussed during the previous agenda items.

VIII. Recommended Operations.

How should we handle next week's flow at McNary, said Henriksen; for modeling purposes, it looks as though the flow is likely to be close to 155 Kcfs. We would prefer to see flows closer to 160 Kcfs-165 Kcfs, based on our discussion at Tuesday's FPAC call, said Nielsen. I think that was contingent on the effects on Grand Coulee elevation, said Wagner – according to the Corps' spreadsheet, 155 Kcfs at McNary would only leave about two feet in Grand Coulee. If we meet 165 Kcfs, that would leave us closer to 1282 feet, he said. I think that's based on a flow of 175 Kcfs, said Fodrea, However, expectations are not matching up to reality, in terms of inflow to Grand Coulee, said Bettin.

After a brief caucus among the salmon managers, Nielsen said it was agreed to target 155 Kcfs at McNary for the week ending July 30.

IX. Next TMT Meeting Date.

The next meeting of the Technical Management Team was set for Thursday, July 20, at the Corps' Northwestern Division headquarters. It was agreed that this meeting will be a conference call. Meeting note prepared by Jeff Kuechle, BPA contractor.

TMT ATTENDANCE LIST

JULY 20, 2000

Ruth Abney	COE	
Scott Boyd	COE	503/808-3943
Dick Cassidy	COE	
Cindy Henriksen	COE	503/808-3945
Kyle Martin	CRITFC	
Patricia McCarty	Facilitator	
Kevin Nordt	PGE	
Rudd Turner	COE	503/808-3935

On Phone:

Name	Affiliation	Phone
Scott Bettin	BPA	
Ken Dragoon	PacifiCorp	
Margaret Filardo	FPC	
Kim Fodrea	Reclamation	
Richelle Harding	D. Rohr & Associates	
Russell Harding	Oregon DEQ	
Steve Hemstrom	Avista Utilities	
Dusica Jevremovich	FPC	
Jim Litchfield	Consultant (Montana)	
Nengjin Liu	Idaho Power	
Christine Mallette	ODFW	
Jim Nielsen	WDFW	
Mike O'Bryant	Columbia Basin Bulletin	

Glen Traeger	AVISTA Energy	
Maria Van Houten	ENRON	
Paul Wagner	NMFS	
Marv Yoshinaka	USFWS	

TECHNICAL MANAGEMENT TEAM

BOR: *Kim Fodrea\Pat McGrane*

NMFS: *Paul Wagner\Chris Ross* BPA: *Scott Bettin\Robyn MacKay*

USFWS: *Marv Yoshinaka\Bob Hallock\Susan Martin*

OR: *Christine Mallette \Chuck Tracy* WA: *Jim Nielsen* ID: *Ed Bowles\Steve Pettit*

MT: *Jim Litchfield* COE: *Cindy Henriksen\Rudd Turner*

COLUMBIA RIVER REGIONAL FORUM

TECHNICAL MANAGEMENT TEAM

RE: July 27, 2000 Meeting

FACILITATOR'S NOTES ON FUTURE ACTIONS

Facilitators: JACQUE ABEL

The following is a list of items that the Technical Management Team (TMT) discussed at its July 27, 2000 meeting that will require future action or discussion, some of them before the next TMT meeting. This meeting was held via conference call. For a more complete discussion of agenda items, see the meeting minutes when they are posted on the TMT homepage.

1. MINUTES. If anyone has any corrections or additions to the minutes of the TMT meeting of July 20, they need to send them to Cindy or Rudd by 5 PM on July 28. None were noted at the meeting.

2. RECOMMENDED OPERATIONS. After extensive discussions of SOR #2000-27, TMT members agreed to the following operations: 165 Kcfs weekly average flow objective at McNary, but Grand Coulee Reservoir elevation is not to go lower than 1283 feet by midnight, August 6.

3. McNARY TEMPERATURE TEST. Rudd reported on the status of McNary Temperature Test and that there are no results yet. More information will be available next week at TMT. A subgroup will meet via conference call about this test next Wednesday, August 2, at 2 PM. The call-in number is (503) 808 5191, and TMT members are welcome to participate.

4. HUNGRY HORSE. Pat McGrane reported that all units were unexpectedly off line yesterday at Hungry Horse for a few hours and Columbia Falls flows dropped as a result. He did not have detailed information yet, but agreed to keep TMT informed and this item will be on the next agenda.

5. PIERCE ISLAND/HARDY CREEK. TMT agreed to work on setting up a field trip, tentatively set for September 7, 2000, to see this area when it is dewatered. Marv Yoshinaka and Jim Nielsen will check to see if this date works for field personnel. Rudd will check on meeting at Bonneville Dam that day. Further planning will be on the next agenda.

6. NEXT MEETING. TMT agreed to meet via conference call again for the August 3 meeting. Please remember that you can come to the meeting in person at room #118 at the COE office.

AGENDA items (in addition to the regular items involving system operations) for August 3 noted at this meeting included:

- * Update on McNary Temperature Test (COE)
- * Report on Hungry Horse (BOR)
- * Pierce Island/Hardy Creek field trip

NOTE: Jacqueline Abel will be facilitating the August 3 meeting, and you can reach her at (503) 282 5920 or at the email address above.

TECHNICAL MANAGEMENT TEAM

MEETING NOTES

July 27, 2000

CORPS OF ENGINEERS NORTHWESTERN DIVISION OFFICES – CUSTOM HOUSE

PORLTAND, OREGON

DRAFT

I. Greeting and Introductions

The July 27 Technical Management Team meeting, held at the Custom House in Portland, Oregon, was chaired by Rudd Turner of COE and facilitated by Jacqueline Abel. 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.

Abel welcomed everyone to the meeting, then led a round of introductions and a review of the agenda.

II. Review of Minutes from July 20 TMT Meeting.

Abel asked that any changes to the minutes from last week's TMT meeting be submitted to Turner or Cindy Henriksen by close of business Friday, July 28.

III. Brownlee Operations Update.

Our understanding is that Idaho Power said they would be providing their response to the SOR submitted at last week's

TMT meeting, said Turner; WDFW did send an official written request, as Idaho Power asked. Nengjin Liu said the current elevation at Brownlee is 2044.8; he said IPC expects to draft the project by one foot today and tomorrow, then the draft will be done. As the letter from WDFW acknowledges, said Liu, on August 26, Idaho Power will be done releasing both the federal pass-through water and the 237 KAF from Brownlee. However, we're continuing to draft beyond our obligation – in other words, we're doing what the SOR requested, said Liu. After Friday, Brownlee outflow will be reduced to 8.9 Kcfs average flow, so that we can get our energy back from BPA, he added. We understand, said Jim Nielsen, and we appreciate Idaho Power's efforts, adding that, although the letter was printed on WDFW letterhead, it was written in his capacity as FPAC chair.

IV. McNary Temperature Test Update.

Turner reported that the McNary temperature test is ongoing, essentially as described at the last TMT meeting, with alternating two-day blocks of Units 1 and 2 on and off to evaluate the effects on temperature in the bypass system. The test started last Thursday, July 20, with the units on; the units were turned off on Saturday and Sunday, back on Monday and Tuesday, off yesterday and today, on again tomorrow and Saturday, and will be turned off for the final time on July 30 and 31. That will conclude the test, Turner said.

He added that there are no results to report yet; there were some fairly high winds last week, which reduced the thermal gradient across the forebay. We are expecting warmer-than-average conditions next week, he said, so should see some good results. This is a nice opportunity to run this test, Turner said – we're seeing some things starting to happen in the system, although temperatures and biological effects are relatively low at the moment.

Turner added that there was some spill at McNary – about 60 Kcfs – from 7 a.m. to 10 a.m. last Friday and Saturday. He said the Corps coordinated with BPA and amended the teletype to the project, instructing project personnel to avoid spill if possible. If it's not possible to avoid spill, he said, we instructed them to spill between midnight and 10 a.m. There has been no spill at McNary since last Saturday. We will have another conference call to discuss the test at 2 p.m. next Wednesday; the number is 808-5191, for anyone interested in dialing in, Turner said. It was agreed that the Corps will provide a further update on this test at next week's TMT meeting.

V. Current System Conditions.

Turner said the system is pretty much being set up to maintain fish flows and steadily draft the various storage reservoirs according to ending levels and dates called for in the Biological Opinion. At Grand Coulee, we're seeing a fairly steady draft toward elevation 1280 by August 31, he said; Dworshak is releasing 12.5 Kcfs and will reach elevation 1520 by August 31. At Libby, he said, we're continuing to release 8 Kcfs, and anticipate that the reservoir will reach a maximum elevation, on August 18, of 2436.6, and an August 31 elevation of 2436.3 feet. That assumes an April-August runoff volume of 5.5 MAF, he added, 87% of normal.

Jim Litchfield said he is still working with the state to develop a rampdown rate to minimize bull trout impacts below Libby. While the operation shown in the spreadsheet is fine for current planning purposes, he said, we may not want to hold 8 Kcfs through the month of September. It was observed that this has been a year of particularly difficult tradeoffs.

Turner said that, in terms of the spreadsheet, there have been some questions of the accuracy of the flows shown for August; as has been mentioned before, he said, the Corps develops the spreadsheet each week with the best forecast information available from the River Forecast Center. There is a possibility that the flows shown from the Canadian projects may be somewhat high, said Cathy Hlebechuk; I used 76 Kcfs from Arrow for the entire month of August in the model. I talked to them this morning, she said, and they said their latest projection is that they will be releasing 72 Kcfs through the entire month of August – they told me they will not be drafting more than seven feet in the month of August. The model also assumes normal precipitation and tributary inflows, said Turner, so that could change as well. In other words, he said, the indicators are that the numbers shown in the current spreadsheet may be at the upper part of the likely range.

Pat McGrane said current Hungry Horse elevation is 3552; outflow is 5.7 Kcfs, and the project is drafting toward elevation 3540 on Aug 31. There was an incident yesterday morning, during a routine testing operation, where all three units were knocked offline for a couple of hours. All three units were back up by 10 a.m. The stage dropped a foot and

a half at Columbia Falls, down from 9.1 Kcfs to 5.6 Kcfs. By 1:15 p.m., flows at Columbia Falls were back up to 9 Kcfs. Our operations folks are trying to figure out what happened right now, added Craig Sprankle; it was an unfortunate incident, beyond anyone's control. Again, we're investigating; the problem came from something that happened inside the project. Marv Yoshinaka asked Reclamation to report back to TMT once the investigation is complete; McGrane said he will do so, probably at next week's TMT meeting.

The Upper Snake is releasing 1.5 Kcfs at Milner; the Payette is releasing 600 cfs above irrigation demand; the Boise is releasing 350 cfs, McGrane added.

On the water quality front, Dick Cassidy said this week's efforts were once again concentrated in the lower river. He said there were some instrumentation problems at the Bonneville forebay station. Because gas levels were pretty low – in the 105%-108%, range, according to the water quality plan, there isn't a need to get someone out to fix that right away. We contacted USGS on Monday morning, and they repaired the station by Wednesday, Cassidy said. On Sunday afternoon, also had instrumentation problems at Camas/Washougal; there was a hole in the membrane, so gas readings shot up to 130%. Again, we informed USGS on Monday morning; they repaired the instrument by Tuesday.

We're having good success maintaining gas levels below the project just at or slightly below 115%, Cassidy continued. We're also staying within 110% below Dworshak, he said; we've been seeing about 108% TDG in the tailwater and 109% at the Peck station. We've been maintaining a steady operation there to ensure gas levels stay below 109% at both the tailwater gauge and at Peck, said Cassidy.

Has Idaho DEQ informed the Corps formally that the standard is now 109%? Nielsen asked. Not in writing, no, said Cassidy – it's been verbal so far.

On the temperature front, said Cassidy, we've been maintaining 48 degrees on the release water from Dworshak; at Peck, we start to see a diel fluctuation; by the time the water reaches Lewiston, you see a 5-degree fluctuation over the course of the day. At Lower Granite, we've been seeing temperatures in the 69-degree range recently, said Cassidy; adding that this temperature information is available via the TMT web page.

Moving on to the status of the fish migration, Chris Ross said a summary is available on the TMT web page. He said a few wild PIT-tagged subyearling fall chinook are still being detected at Lower Granite; overall, the migration in the Snake is continuing, but declining. Smolt indices are still in the 70,000 range at McNary, so numbers are still substantial there. Anything to note on fish condition? Turner asked. Ross replied that his understanding is that fish condition is still good in both the Snake and the Lower Columbia. Margaret Filardo said mortality at McNary has been running 1-2% over the past several days.

VI. New System Operational Requests.

On July 26, the Corps received SOR 2000-27, covering operations at Grand Coulee during the first week in August. This SOR, supported by ODFW, USFWS, WDFW, NMFS and IDFG, requests the following specific operations:

- Utilize a portion of the available volume in Grand Coulee reservoir during the first week in August, reaching elevation 1282 feet on August 6.

Nielsen spent a few minutes going through the contents of this SOR, the full text of which is available via the TMT and FPC web pages; he noted that the intent of this SOR is to improve conditions for the substantial number of migrating juvenile salmonids still in the system, given the fact that projected flows are well below the Biological Opinion flow target in the lower river.

You're hoping for a flow of about 155 Kcfs at McNary? Scott Bettin asked. Whatever this reservoir elevation gives us, Nielsen replied; one of the reasons we chose an elevation, rather than a flow target, was the uncertainty about the forecast. Basically, we wanted to utilize a portion of the BiOp volume in Grand Coulee this week, he said, rather than filling Grand Coulee if the Canadians release more water than expected. Turner said that, based on his understanding of the most recent information, this SOR would yield a flow of about 180 Kcfs next week at McNary.

McGrane said he has a problem with this SOR; he said his understanding is that the SOR is intended to benefit the listed fish from the Snake River, and those fish are currently doing fine. If we reduce Grand Coulee elevation to 1282, he said, that gets us down to our normal operating range of two feet, between 1280 and 1282. The bottom line is that, after extended debate this week at FPAC, this is what we came up with as the best way to meet the needs of the migrating fish, Nielsen replied.

Bob Heinith said the treaty tribes do not support this SOR; they would prefer to retain some water for use on adults and later juvenile migrants in September. Litchfield said he essentially agrees with Heinith; noting that, in this water year, we need to be very careful not to use all of the water up right away. Keith Underwood added that he hopes this SOR is not setting up a situation where the salmon managers will be asking to go below elevation 1280 at Grand Coulee this year, because such a request would receive a strong negative vote from the tribe. Our intent is not to go below the Biological Opinion draft this year, Nielsen replied. My concern is that the new BiOp is going to call for drafting Grand Coulee to elevation 1278, said Underwood. My interpretation is that we won't be operating to the new BiOp until it is finalized and signed, said Turner. We haven't come to agreement as to whether the provisions of the 2000 FCRPS Biological Opinion will be implemented this year or not, said Wagner. Reclamation would support a continued 155 Kcfs at McNary, said McGrane; our position is clear – we're operating under the old BiOp until the new one is signed. What would the elevation be at Grand Coulee on August 6 if we maintain 155 Kcfs? Nielsen asked. Around 1284 feet, or perhaps a little above that, McGrane replied.

Washington doesn't agree with Heinith's comments, said Nielsen, we believe using that volume for the juveniles in the river now is the best use of that water, given the slowness of the current migration. Martin said the latest 30-90 day forecast indicates higher-than-normal temperatures from now through the end of August. Still, there will be fewer fish present later in August, hence this recommendation, said Wagner.

We might propose a target of 160 Kcfs at McNary, and say don't refill Grand Coulee over its Sunday night elevation, said Ross. That's what I would propose as well, said Wagner. With an outflow of 160 Kcfs, I don't think you're going to see any refill at Grand Coulee, said McGrane. We go through this debate every year, said Underwood; in some years we go to a straight-line draft in August, while this year, you're proposing an up-front draft at the beginning of August. Is there any data that shows which operation is most beneficial, biologically? Each year is different, Nielsen replied – this year is shaping up more like 1992.

At this point, the SOR's supporters requested a brief caucus. When the meeting resumed, Nielsen said the salmon managers had agreed to change their recommended operation at Grand Coulee. Rather than the operation proposed in SOR 2000-27, the salmon managers are now requesting that a target flow of 165 Kcfs be maintained at McNary for the week ending August 6, with no refill at the project above its July 30 ending elevation. Also, given the uncertainty about Canadian operations, the salmon managers stipulate that the project be drafted no lower than elevation 1282 by August 6 in order to maintain the 165 Kcfs target flow at McNary. McGrane said Reclamation would prefer a lower flow target than 165 Kcfs; it appears from the biological perspective that such an operation simply isn't justified. We're looking for an increase in flow to stimulate fish movement, Nielsen said. Would a 10 Kcfs change stimulate them that much? Bettin asked. We're looking for whatever we can get, said Nielsen – this is a compromise from our previous proposal, and this is where we wound up in caucus.

Scott, do you have any feeling for where 165 Kcfs would leave us, elevation-wise, on August 6? McGrane asked. No idea, at this point, Bettin replied. Heinith said the tribes' bottom line is that they would like Grand Coulee to be at elevation 1281 on August 31, so there is some water available for fish in September, and to help minimize pool fluctuations during the treaty fishery; they would also like to see a steadily-declining hydrograph through the end of August. Basically, he said, the tribes don't support this kind of pulsing operation, or an aggressive draft of Grand Coulee at this time. He added that the tribes would also like the Corps to make its model inputs available. As far as I know, "no" is still the answer to that request, said Turner. The reason we don't release the entire SSARR run is to protect the proprietary information it contains, said Scott Boyd. That is public information, paid for by taxpayer dollars, said Martin – that's a nonsensical excuse. Talk to our legal department, said Turner – there's no point in rehashing that argument at today's meeting. I'd just like the record to reflect that this is an ongoing problem, Heinith said.

After a few minutes of further discussion, Abel asked whether the Grand Coulee operation is an issue that needs to be

elevated to the IT. I would be happier with 155 Kcfs at McNary, with a stipulation that no refill occur above the project's July 30 elevation, said McGrane. You're advocating a pass inflow operation for the week ending August 6? Nielsen asked. Essentially yes, McGrane replied. That's not what we're looking for, said Nielsen – we're advocating a draft of Grand Coulee next week.

What about a target of 165 Kcfs at McNary, but go no lower than elevation 1284 by midnight on August 6? McGrane asked. That would give us a 1.5-foot draft next week. What's the likelihood of getting an average of 165 Kcfs, with that elevation limit? Filardo asked. Good, according to the Corps' spreadsheet, McGrane replied.

After a few minutes of further discussion, Turner and Bettin said the Corps and BPA would support either of McGrane's proposals. We're willing to support the 165 Kcfs flow target, said McGrane, but we want to be sure there is some water left for the rest of the month. If we go down to elevation 1282 by August 6, said McGrane, it's fairly obvious to me that Grand Coulee would need to be below elevation 1280 on August 31. That's a huge assumption, at least from the standpoint of the fish managers, Nielsen replied. Are you saying that the salmon managers will not request drafting Grand Coulee below elevation 1280 in August? Turner asked. I have no plans to do so, Nielsen replied.

Again, do we need to elevate this issue to IT? Abel asked. We're pretty close, said Ross – we should be able to work this out. What about a compromise, setting the elevation floor at 1283 feet? he asked. We could also split the flow difference, and target 160 Kcfs, said Turner. I would propose 165 Kcfs and an elevation floor of 1283 feet on midnight, August 6, Ross said. And if we end up higher than elevation 1283, so be it? McGrane asked. Yes, Ross replied.

Given the fact that we seem to have some certainty about what the Canadians are going to do next week, I would be willing to support Chris' compromise, said Nielsen. The tribes would not support going below elevation 1283.5, said Heinith. McGrane said his calculations indicate a good probability that the project would end up higher than elevation 1283 feet on August 6, given a target flow of 165 Kcfs. For that reason, he would be willing to support Ross' compromise as well. Bettin said BPA supports it as well; Turner said it is OK with the Corps. Yoshinaka said the Fish and Wildlife Service supports the compromise; Mallette said she wants to reiterate the need to improve migration conditions for the fish in the system right now. She said Ross' compromise is a reasonable one, and in the interest of reaching agreement, Oregon will support it. Steve Pettit said Idaho supports the compromise as well; Ross said NMFS also supports it. Litchfield said Montana is also willing to support the compromise proposal, although he cautioned that the TMT needs to be extremely conservative about its water management decisions this month at Grand Coulee.

It sounds, then, as though we have reached agreement on an operation for the week ending August 6, said Abel; it was a difficult decision, so thanks for sticking with it.

VII. Recommended Operations.

Recommended operations were covered during the previous agenda item.

VIII. Other.

A. TMT Field Trip to Pierce Island in August. Abel asked when the appropriate time would be for this field trip; it was agreed to schedule it for a time when flows in the lower river are below 125 Kcfs, probably in early September. Abel suggested Thursday, September 7 as a potential date for this excursion; there was general agreement that this should be a workable date.

B. Chum Enhancement Activities in the Greys River Basin. Nielsen said this update was requested at a previous TMT meeting; he said he had sent out an email to those involved with the lower river chum issue earlier this year. All land acquisition activities have been deferred until at least 2002, he said; for the coming year, the intent is to do the habitat assessment work, and to trap adults at the Gurley Springs site and incubate the eggs at WDFW's Greys River Hatchery. A total of 300,000 eyed eggs were taken last year and outplanted to two sites. Emergence trapping this spring found few juvenile fish in the Greys River, indicating that survival was probably poor. Genetic analysis is now underway to evaluate the genetic interactions between the Greys River fish and the chum populations at Ives and Sand Islands. In response to a question from Bettin, Yoshinaka said the restoration work at Hardy Creek has not yet been completed. It was agreed to add a visit to the Hardy Creek channel, and to the stranding area, to the above-referenced

field trip.

IX. Next TMT Meeting Date.

The next meeting of the Technical Management Team was set for Thursday, August 3, at the Corps' Northwestern Division headquarters. It was agreed that this meeting will be a conference call. [TMT members agreed on Monday 31 July to make this a face-to-face meeting instead.] Meeting notes were prepared by Jeff Kuechle, BPA contractor.

TMT ATTENDANCE LIST

JULY 27, 2000

Jacqueline Abel	Facilitator	
Ruth Abney	COE	
Scott Boyd	COE	503/808-3943
Dick Cassidy	COE	
Cathy Hlebechuk	COE	
Rudd Turner	COE	503/808-3935

On Phone:

Name	Affiliation	Phone
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Ken Dragoon	PacifiCorp	
Margaret Filardo	FPC	
Richelle Harding	D. Rohr & Associates	
Bob Heinith	CRITFC	
Phillip Irvin	Seattle City Light	
Dusica Jevremovich	FPC	
Jim Litchfield	Consultant (Montana)	
Nengjin Liu	Idaho Power	
Christine Mallette	ODFW	

Kyle Martin	CRITFC	
Kurt Miller	PGE	
Jim Nielsen	WDFW	
Steve Pettit	IDFG	
Chris Ross	NMFS	
Craig Sprankle	Reclamation	
Glen Traeger	AVISTA Energy	
Keith Underwood	Spokane Tribe	
Maria Van Houten	ENRON	
Paul Wagner	NMFS	
Steve Wallace	PacifiCorp	
Marv Yoshinaka	USFWS	

TECHNICAL MANAGEMENT TEAM

BOR: *Kim Fodrea\Pat McGrane*

NMFS: *Paul Wagner\Chris Ross* BPA: *Scott Bettin\Robyn MacKay*

USFWS: *Marv Yoshinaka\Bob Hallock\Susan Martin*

OR: *Christine Mallette \Chuck Tracy* WA: *Jim Nielsen* ID: *Ed Bowles\Steve Pettit*

MT: *Jim Litchfield* COE: *Cindy Henriksen\Rudd Turner*

COLUMBIA RIVER REGIONAL FORUM

TECHNICAL MANAGEMENT TEAM

MEETING NOTES

July 31, 2000

CORPS OF ENGINEERS NORTHWESTERN DIVISION OFFICES – CUSTOM HOUSE

PORLAND, OREGON

DRAFT

I. Greeting and Introductions

The July 31 Technical Management Team conference call, convened to discuss a potential weather-related power system emergency, held at the Custom House in Portland, Oregon. The call was chaired by Cindy Henriksen of the Corps and facilitated by Jacqueline Abel. 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.

Abel welcomed everyone to the meeting, then led a round of introductions and a review of the agenda.

I. Current and Projected Power System Conditions.

Therese Lamb of BPA began by reporting that Powerhouse 1 at Grand Coulee went out of service on Friday, July 28, resulting in the loss of 1560 megawatts (G 1-9 the left powerhouse) of generating capacity. Another Grand Coulee powerhouse (the right powerhouse) went down on Saturday, July 29, but is now back on line. The loss of Powerhouse 1, plus the expectation that California may be entering a Stage 3 emergency, led us to fill as much as possible into the projects on the lower river, Lamb said, adding that Lower Granite has also been filled outside of MOP and is currently nearly at full pool.

In a Stage 3 emergency, rolling blackouts – shutting off different sections in the city for 30 minutes at a time – are imposed, Lamb explained; Bonneville has made a commitment that we will do whatever is needed to minimize or avert such a Stage 3 emergency. On Friday, she said, we were looking for a series of actions that could be implemented immediately. We have been talking with officials in California, which is currently in a Stage 1 emergency; their feeling is that California will go to a Stage 2 emergency later this afternoon. If they lose any type of generating resource, or if

temperatures are higher than expected, they will go to a Stage 3, Lamb said, noting that a further 1560 MW of thermal unit outages have already been reported at the Colstrip facility earlier today.

The powerhouse at Grand Coulee could be repaired as soon as Wednesday, or repairs could take up to a year – that's the latest word I've received from the project, said Kim Fodrea. We don't know, at this point, if equipment needs to be replaced, or if it can be repaired. For the purposes of the current emergency situation, she said, it's fair to assume that Powerhouse 1 at Grand Coulee is not going to be available to us. Beyond that, there are just a lot of unknowns about the situation right now.

What's hydraulic capacity at Grand Coulee right now, with only Powerhouses 2 and 3 available? Henriksen asked. It's 178 Kcfs, Bettin replied. What lead time will we have, if the decision is made to go from Stage 2 to Stage 3? Henriksen asked. Anywhere from a few minutes to an hour, Bettin replied. In response to another question, Lamb said the DC intertie is just about full; there is some capacity still available on the AC intertie.

It sounds like there may be a problem here in the region as well, said Jim Litchfield. Temperatures aren't as hot today as they were yesterday, Bettin replied – load was fine over the weekend, but it's still pretty hot on the east side of the Cascades. Temperatures are a little lower than expected in California today, but are expected to warm up tomorrow.

On the public information front, said Lamb, the Californians have been issuing pleas for conservation, and have seen some reductions in load. We have been trying – unsuccessfully so far – to fashion something similar here in the Northwest; we anticipate that we will be issuing a media advisory requesting voluntary conservation. Bonneville has also been pursuing voluntary reductions in industrial load, but have been able to obtain only 65 MW of commitments today, and at least 160 MW tomorrow. We're still working on it, she said.

How close are we to a problem of our own? Jim Nielsen asked. We're right at load balance, currently, Bettin replied. The 1560 MW in lost Colstrip production was headed to California anyway, so that shouldn't really affect load balance in the Northwest; however, we won't see peak load until between 1 and 10 p.m. today. All I can tell you is, everything we can do has been done, Bettin said.

As Therese mentioned, Bonneville has been trying to develop a prioritized list of FCRPS actions to be taken in response to this potential emergency, and it would be helpful to have the TMT's input, Bettin said. He noted that copies of BPA's draft emergency actions list are available via the TMT website. Essentially, you're saying this is a draft list, and you would like our input about what we should do if California goes to a Stage 3 emergency? Abel asked. Correct, Bettin replied. In response to question from Nielsen, Kyle Martin said the tribes are aware of the emergency situation, and have been following it closely.

In terms of the specific actions on the current draft list, said Bettin, so far, we have implemented Actions 1, 2, 3, 5, 6, 8 and 24. This is not a priority list, then? Jim Litchfield asked. It is, roughly, but what gets implemented depends on where the emergency is occurring, Bettin replied.

Chris Ross noted that, at Lower Granite, elevation 738 is full pool, a five-foot operating range. Current project elevation is 735.8 and drafting. When we put the list together, it was intended to work with Item 23, but the problems at Grand Coulee have resulted in some change in priority, said Robyn MacKay. Will you be contacting the Governors? Litchfield asked. All of the governors have been contacted to ask if they want to participate in the pleas for conservation; Lamb replied; the governors of Montana and Idaho have declined to participate, but do not oppose the emergency actions; the governor of Oregon is considering whether he wants to participate, and I'm not sure about Governor Locke of Washington. The group spent a few minutes discussing exactly what BPA will be issuing to the media, a press release or a "media advisory;" there was some confusion on this point.

Lower Granite is drafting, currently, but what happens there will depend on what happens to the system and the weather later today, said Bettin. The planned unit outage at McNary has been postponed, as has been the one-unit outage at Chief Joseph, he added. Henriksen noted that some additional flexibility – about 100 MW in generation – will be available later today at the Willamette projects. Bettin added that, based on the priorities laid out in the actions list, it is BPA's intent to shut down Banks Lake pumping from 1 p.m. to 10 p.m. today and tomorrow.

Fodrea said that, given the fact that there are only three pumps available at Banks Lake, it may not make sense to reduce pumping at this point – if we don't pump, we'll lose a foot per week in elevation at the project, given current irrigation demand. The tribes would be opposed to any reduction in Banks Lake pumping, even though we're in an emergency situation right now, said Martin – we would like to see that extra water available later in the season. My suggestion is that we move Banks Lake down further on the list of priorities, said Fodrea. I agree, said Nielsen. Any possibility of reducing Banks Lake discharge? He asked. I don't think that's a possibility, said Fodrea – it's a legal problem, and realistically, given current temperatures, I just don't think it's feasible.

It needs to be on the list somewhere, said Bettin, it's just a matter of where. Could we put it at Number 20? Fodrea asked. That would be fine with BPA, said Bettin. In response to a question from Litchfield, Bettin said it takes approximately 150 MW to operate the three Banks Lake pumps. That's more than the Willamette generates, Litchfield observed. Despite this fact, there was general agreement that Banks Lake pumping be moved down to number 20 on the priority list.

Bettin asked whether the TMT had any other suggested changes or additions to BPA's draft list of emergency action priorities. A lengthy discussion yielded the following coordinated list:

Revised Prioritized List of FCRPS Operations Which May Be Used

During a NW or SW System Reliability Event

Final 7/31/00

1. Regional plea for energy conservation
2. Voluntary load curtailment of industrial users
3. Rescheduling of unit outages
4. Increase Willamette projects' generation
5. Purchase all available energy
6. Maximize Treaty/Non Treaty water releases
7. John Day _ increase operating range to 265 ft. to 262.5 ft.
8. yGrand Coulee _ draft at 1.5 ft/day (or until restricted by JDA cutplane)
9. Lower Granite _ utilize full operating pool
10. Albeni Falls _ operate at full power to elevation 2062 ft. mindful of ramp rates.
11. The Dalles _ reduce spill to 30%
12. The Dalles _ reduce spill to 20%
13. Bonneville _ reduce daytime spill to 50 kcfs
14. John Day _ reduce daytime spill to zero (JDA is expected to be at zero 7/31_8/3)
15. McNary _ operate outside 1% operating efficiency at 50% overload (approx. 72 Mws)
16. Hungry Horse _ operate all available units (bring up to 3 units until further notice)
17. *John Day _ reduce spill to zero (nighttime)

18. *The Dalles _ reduce spill to zero
19. *Ice Harbor _ reduce spill to zero
20. *Bonneville _ reduce spill to zero
21. Bonneville _ operate outside of 1% operating efficiency
22. McNary _ operate outside 1% operating efficiency at 100% overload (approx. 81 Mws)
23. yBanks Lake _ operate PGs / sag on Banks Lake to elevation 1565 ft.
24. "yGrand Coulee _ increase to 2 ft/day draft
25. "Snake River Projects _ go to zero nighttime flow (lower Snake projects may go above MOP)
26. "Dworshak _ increase discharge to 21 kcfs
27. "Libby _ operate all available units (maintain minimum flow of 7 kcfs at night)
28. "John Day increase operating pool range to a low of 260 ft.
29. "McNary _ pull fish screens

FOOTNOTES:

"Due to a fire at Grand Coulee 2nd powerhouse on 7/28/00, Grand Coulee is currently being base loaded and is not in a position at this time to respond as shown on the list above. This also impacts the operation of Banks Lake.

"Items 17_20 may be utilized for up to six hours at a time. Judi Johansen will coordinate with the General Strock if additional hours are required.

"Items 24_29 will require additional coordination between Judi Johansen and General Strock and Mr. McDonald before being implemented."

There was some discussion about whether this list should apply only to the current emergency, or whether it should be put together on a more permanent footing; Henriksen noted that the TMT did produce a list of priorities on June 29, but said it may be unrealistic to try to develop a generic list. After a few minutes of discussion, it was agreed to address this issue in more detail at a future TMT meeting.

What about the footnotes at the bottom of the list? Abel asked. We had talked about going to zero spill for up to six hours, said MacKay; the Corps was uncomfortable about that, so Judi Johansen would need to coordinate any such implementation items directly with the Corps. The same is true of the other footnoted items, she said.

In response to a question from Martin, MacKay said the revised list of priorities will be posted to the TMT website immediately after today's meeting.

III. Salmon Managers' Recommendation On Emergency Measures.

Nielsen noted that, following last Friday's conference call to discuss this potential emergency situation, he, in his capacity as FPAC co-chair, sent out a letter indicating that Idaho, Oregon, Washington, USFWS and CRITFC recommend against any reduction in spill at this time. With respect to the other measures, said Nielsen, our assumption is that all non-fish measures will be taken before moving to overgeneration. Also, if any BiOp measures are compromised, we assume that NMFS will ensure that they will be mitigated for, in terms of additional fish protection measures.

Does all of that still apply, given what you've heard today? Abel asked. It does for Washington, Nielsen replied. Yoshinaka said it does for the Fish and Wildlife Service as well, as did Martin of CRITFC, Steve Pettit of Idaho and Christine Mallette of Oregon. In response to another question, the salmon managers said they would be very uncomfortable if any of the items below Item 9 on the revised list were to be implemented, although Yoshinaka said he will need to check on several of these lower-priority items with others in his agency, and will report back to Henriksen and MacKay later this afternoon.

IV. Develop Emergency Measures.

It sounds as though, while we're focused on the current emergency, there is a desire to develop a more permanent list of priorities for use in the future, said Abel. Where does that leave us, in terms of developing operations for today? What about other options, such as increasing Grand Coulee outflow, cancellation or renegotiation of contracts, or additional power purchases, which could be taken before encroaching on fish protection measures? Wagner asked. We are pursuing contract renegotiations, as I said before, in the form of voluntary load curtailments, Lamb replied. With respect to other measures, increasing generation at Grand Coulee will depend on how soon the situation there can be resolved, she added. In response to another question from Wagner, Lamb said that increased generation at Grand Coulee alone might not solve the problem, additional lower river generation would also be needed to maintain system stability.

In response to another question, it was agreed that any mitigative actions taken will likely be a product of joint discussions between the salmon managers and the federal operators, similar to what was done in the wake of the emergency at The Dalles several years ago.

So from an action agency's point of view, we're planning to look at what is implementable today, down to about Number 9 on the list, Henriksen said. I have also heard that California will not be at a Level 2 emergency yet, that tomorrow is probably the main concern, from a power demand perspective, and that the rest of the week looks better, in terms of weather, she added. Correct, said Lamb – California is expected to declare a Level 2 emergency at 2 p.m. today.

It also sounds to me as though the salmon managers are uncomfortable with Item 10 and beyond, said Henriksen. Once we get down into that range, there would be a limited window in which we would implement any of those actions; I don't see that we would need to implement any of them as long as California is only in Level 2. We would only go there if they notify us they're going to Level 3, or if a serious generating emergency occurs here in the Northwest, said MacKay.

In response to a question from Wagner, MacKay said the current emergency situation was declared in response to both the loss of the powerhouse at Grand Coulee and because of the notification that an emergency declaration was imminent in California; the instruction to fill Lower Granite above MOP went out late Saturday night. The response was limited to Lower Granite? Wagner asked. Correct, Bettin replied.

Again, we think the real crisis will occur tomorrow, said Bettin, although if we lose any additional resources later today, the whole world could change.

It sounds, then, as though we have the information we need for later today and tomorrow, said Henriksen; if we need to have another emergency conference call tomorrow, we'll let people know. In the interim, we will have an update at this week's TMT meeting, which should probably be face to face, rather than a conference call. It was so agreed.

With that, the conference call was adjourned. Meeting notes prepared by Jeff Kuechle, BPA contractor.

TMT PARTICIPANT LIST

JULY 31, 2000

Jacqueline Abel	Facilitator	
Ruth Abney	COE	
Scott Boyd	COE	503/808-3943
Dick Cassidy	COE	
Cindy Henriksen	COE	503/808-3945
Rudd Turner	COE	503/808-3935

On Phone:

Name	Affiliation	Phone
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Kim Fodrea	Reclamation	
Therese Lamb	BPA	
Jim Litchfield	Consultant (Montana)	
Robyn MacKay	BPA	
Christine Mallette	ODFW	
Kyle Martin	CRITFC	
Jim Nielsen	WDFW	
Steve Pettit	IDFG	
Chris Ross	NMFS	
Paul Wagner	NMFS	
Marv Yoshinaka	USFWS	

TECHNICAL MANAGEMENT TEAM

BOR: *Kim Fodrea\Pat McGrane*

NMFS: *Paul Wagner\Chris Ross* BPA: *Scott Bettin\Robyn MacKay*

USFWS: *Marv Yoshinaka\Bob Hallock\Susan Martin*

OR: *Christine Mallette \Chuck Tracy* WA: *Jim Nielsen* ID: *Ed Bowles\Steve Pettit*

MT: *Jim Litchfield* COE: *Cindy Henriksen\Rudd Turner\Dick Cassidy*

COLUMBIA RIVER REGIONAL FORUM

TECHNICAL MANAGEMENT TEAM

RE: August 3, 2000 Meeting

FACILITATOR'S NOTES ON FUTURE ACTIONS

Facilitator: Jacqueline Abel

The following is a list of items that the Technical Management Team (TMT) discussed at its last meeting that will require future action or discussion, some of them before the next TMT meeting. This meeting was held via conference call. For a more complete discussion of agenda items, see the meeting minutes when they are posted on the TMT homepage.

1. MINUTES. Paul noted one change to the notes from the Monday conference call. If anyone has any corrections or additions to the minutes of the TMT meeting of July 27, they need to send them to Cindy or Rudd by 5 PM on August 4.
2. POWER SYSTEM EMERGENCY. After reviewing the power system emergency situation from earlier this week, TMT spent some time reviewing the priority list that they developed on their Monday conference call. Robin agreed to make the changes suggested, and to distribute a new list by emailing it to the COE.
3. TMT PROTOCOL FOR DECLARING EMERGENCY OPERATIONS. TMT also reviewed the protocols attached to TMT's Water Management Plan (April 4, 1997), in light of this week's emergency situation. It was agreed that the protocols need to be more specific about how an emergency is declared, and that an email from the appropriate Action Agency to all TMT members would be the appropriate way to make this declaration. Robin will draft some language to add to the protocols and will bring that back to TMT at the next meeting.
4. ICE HARBOR MINIMUM SPILL. NMFS proposed a 20K minimum spill to start Thursday night. The COE will need to check with the District and then consult via phone about this operation. It was agreed that this should be discussed at FPOM during their meeting next week. Rudd will get this topic on their agenda to review and give their recommendation.
5. RECOMMENDED OPERATIONS. After extensive discussions of SORs #2000-C3 and #2000-C4 from CRITFC, and of SOR #2000-28 TMT members did not reach agreement to this weeks operations.
6. ISSUE RAISED TO THE IMPLEMENTATION TEAM. The following issue was

framed by TMT and a conference call was set for the IT for 3 PM on August 3. TMT members agreed to brief their IT representatives for the afternoon conference call.

"Should the Action Agencies implement an action/operation which would result in flow in excess of hydraulic capacity resulting in spill, which could decrease transportation from McNary? IT should see SORs 2000-C3 and 2000-28 for background.

Background:

- * If IT answers Yes, TMT agrees to operate to a target flow of 175 KCFS at McNary, without going below elevation 1282 at Grand Coulee, for the week ending August 13.
- * If IT answers NO, TMT agrees to operate to the hydraulic capacity of McNary Dam for the week ending August 13.

6. NEXT MEETING. TMT agreed to meet at the COE office next week for an "in person meeting". The conference call-in line will be available for those who cannot attend in person.

AGENDA items (in addition to the regular items involving system operations) for August 10 noted at this meeting included:

- * Update on McNary Temperature Test (COE)
- * Minimum spill level at Ice Harbor (NMFS)
- * Language to add to the emergency protocols

TECHNICAL MANAGEMENT TEAM

MEETING NOTES

August 3, 2000

CORPS OF ENGINEERS NORTHWESTERN DIVISION OFFICES – CUSTOM HOUSE

PORLAND, OREGON

DRAFT

I. Greeting and Introductions

The August 3 Technical Management Team meeting, held at the Custom House in Portland, Oregon, was chaired by Cindy Henriksen of COE and facilitated by Jacqueline Abel. 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.

Abel welcomed everyone to the meeting, then led a round of introductions and a review of the agenda.

II. Review of Minutes from July 27 and July 31 TMT Meetings.

Abel asked that any changes to the minutes from the last TMT meeting and Monday's conference call be submitted to Henriksen by close of business Friday, August 4.

III. McNary Temperature Test Update.

Rudd Turner said there is little to report on this subject; yesterday's conference call was cancelled, and WDFW has not yet produced its report on this test. Turner noted that the test went well until the last "units off" replicate, when McNary had to go to full powerhouse generation because of the power system emergency – in other words, we lost the last day of the test, he said. We will conclude the test this weekend, with Units 1 and 2 shut off on Saturday and Sunday, he said, adding that a further update will be provided once information from the test is available from WDFW.

IV. Hungry Horse Discharge Incident Update.

Kim Fodrea provided a report on the recent powerhouse outage at Hungry Horse. She explained that the project has four units; the power goes out three lines on each side, but some comes back for station service. The lines feed into a double-ended bus station; depending on which unit you're running, you can tell which side of the substation to draw power from. Normally, said Fodrea, you can control this from the control room; if the control room goes down, you should be able to switch over manually.

During a normal walk-through of this manual switchover procedure on July 26, something went wrong, and we lost station service, Fodrea said. Unit voltage regulation is powered by station service; we lost station service, the units shut down, and flow was down for about an hour and a half, she said. There are some ways to release water, such as spill through the glory hole, but with the flashboards in place, we couldn't use that, said Fodrea. Instead, we chose to just get the units back up, which was accomplished in about 90 minutes.

Mary Yoshinaka said USFWS' Helena office is concerned about the frequency of outages at the Montana projects; Fodrea replied that Reclamation is in the process of ensuring that this situation does not repeat itself in the future. In response to a question from Scott Bettin, Yoshinaka said USFWS probably wouldn't object to some spill from the Hungry Horse draft tubes in the case of an extended outage.

V. Power System Emergency Update.

Bettin reported that the power system emergency discussed at the TMT conference call of July 31 was officially over by 8 p.m. yesterday. We have now restored John Day and Lower Granite pools to their normal operating range, he said, and should now be back to normal operations, at least until the next emergency occurs. BPA has produced a memo documenting what happened during the emergency day by day; the largest excursion was Lower Granite out of MOP by 1.5 feet for three days, he said. Bettin thanked the TMT for their help in resolving the emergency. In response to a question, Robyn MacKay added that it never became necessary for California to declare a Stage 3 emergency.

Yoshinaka said he had talked to USFWS' Montana office about the priority of the Libby and Hungry Horse actions on the emergency procedures action list discussed during the July 31 conference call; they asked that Hungry Horse be moved down the list between the current Actions 21 and 22. He noted that Scott Bettin had participated in a conference call to discuss Montana operations; at that time, he informed the Fish and Wildlife Service that the Hungry Horse operation had already begun, due to the time lag involved.

The Montana office would like to see the Hungry Horse actions moved down the list in the future, Yoshinaka said. They would also like to put Libby actions as far down the list as possible, due to the need for stable flows in the Flathead and Kootenai for bull trout spawning, he said. We could also consider implementing a range of operations at Libby, said Bettin – maybe bringing up one unit at a time. We would like to ensure that any ramp-up occur gradually, if possible, Yoshinaka said. The problem is lead time, said Bettin – it takes up to three days to get Libby up to full powerhouse discharge.

Henriksen said the Corps restored normal summer fish operations at all projects as of midnight last night. Is there more we need to do administratively now, she said, or should we just let our TMT emergency protocols take over in the event of future power system emergencies? I would like to see something for the record that an emergency has been declared, said Yoshinaka. What form would you like that to take? Bettin asked – we have the teletypes to the projects. Just an email saying an emergency has been declared, and outlining the actions taken, would cross that "T", Paul Wagner said. After a few minutes of additional discussion, Bettin said BPA will send out such an email in the future declaring the emergency.

The group devoted a few minutes of discussion to the TMT emergency protocols, and whether they worked adequately during this week's emergency. Wagner said that, in his view, they worked well this week, with the exception of this small item about an email to document the start of an emergency. It was agreed to add a sentence to the TMT's emergency protocols stipulating that an email will be sent out informing the TMT that an emergency situation exists, and what actions are being taken. MacKay said she will draft this sentence and bring it to the next TMT meeting.

Wagner touched on the emergency actions list; he said that, in the future, NMFS' recommendation is that the current Number 21 ("Bonneville operate outside of 1% operating efficiency") be moved in front of the current Number 13 ("Reduce Bonneville daytime spill to 50 Kcfs"). Also, he said, NMFS would like to see the Corps move the current Number 12 ("Reduce spill at the Dalles to 20%") to below the current Number 15 ("McNary operate outside 1% operating efficiency at 50% overload"). We'll make those changes, said MacKay. We'll also make the change requested to the Hungry Horse priority, said MacKay – it will become the new Item 22. Bettin reiterated BPA's concern about lead time for Libby and Hungry Horse ramp-up; Yoshinaka replied that, when a future emergency occurs, the TMT can talk about when to begin Libby and Hungry Horse operations. MacKay said she will make the requested changes to the actions list, and will send it to the Corps for posting on the TMT website.

Jim Nielsen reiterated the salmon manager's position that any emergency actions that impact fish operations be mitigated for in-season. In response to a question from Nielsen, Bettin replied that the California ISO's cap on the price they will pay to purchase power did not appear to have an impact on the most recent emergency. The problem was that there was simply no additional capacity available on the intertie, he said. The bottom line is, California needs to build some additional resources, and they're working on that, he said. Is there a resource out there which could reduce or eliminate this problem in the future, which California hasn't been willing to pay for? Nielsen asked. Not that I'm aware of, Bettin replied.

VI. Minimum Spill Level at Ice Harbor.

Wagner said this issue revolves around whether or not to continue to operate Ice Harbor in its present mode. NMFS is concerned about the fact that spill is currently very low at Ice Harbor – about 4.5 Kcfs, due to low flows in the Snake, he said; other projects have a minimum spill level, but there is some question about whether there is a minimum spill level at Ice Harbor. We have talked about establishing a minimum of 20 Kcfs spill at this project, he said; we have discussed this issue at length among the salmon managers, and wanted to have some discussion at TMT.

If you impose a 20 Kcfs spill cap around the clock, said Bettin, we couldn't function at the Snake River projects. At night, we're required to go to 100% spill, but there is no minimum associated with that. Do we still need to operate one unit to ensure system stability? Wagner asked. During the day, Bettin replied. Do you want to use 20 Kcfs as a cap, and go down to zero? he asked. Bettin noted that there are a couple of issues associated with this question – for example, the minimum generating requirement and requirements for adult passage.

Bettin suggested that the TMT request that FPOM take up this issue. We could – they're meeting next week, said Turner. We could ask them to discuss it, then come back to TMT with a recommendation. It was so agreed. Wagner said NMFS' preference would be to impose a 20 Kcfs minimum spill at Ice Harbor during the hours when spill is occurring. So you would have some hours at 20 Kcfs spill, and some hours at zero spill? Bettin asked. Correct, Wagner replied. And you would like FPOM to consider whether or not they think that is a good operation? Abel asked. Correct, Wagner replied; if they have an alternative operation to suggest, we would be interested to hear it.

We'll need to check with the district to see whether or not it is feasible to implement the 20 Kcfs minimum, said Turner.

I think it's doable, said Bettin. Still, we'll make some calls this afternoon, said Turner. Is there support for the 20 Kcfs minimum, and asking FPOM to put this issue on their agenda? Abel asked. No TMT disagreements were raised to this resolution. I'll contact FPOM, said Turner, and give them a heads-up.

VII. Current System Conditions.

Henriksen reported that a Libby/Arrow swap appeared to be at hand; last week, it looked as though Libby outflow would be reduced to 7 Kcfs, with Arrow increasing outflow to provide the additional 1 Kcfs. On Monday, however, B.C. Hydro informed the Corps that they're not ready to implement that operation at this time; Libby outflow, therefore, is still at 8 Kcfs, with a current project elevation of 2435 feet.

Fodrea reported that Grand Coulee elevation is currently about 1284 feet, adding that she assumed that most of the other TMT participants were already aware of the failed circuit breaker and fire at that project. It will take some time to fix this problem, Fodrea said; they have to analyze the toxins in the soot before cleanup can begin. Three pumps are now running around the clock at Banks Lake, she added; the other three pumps are out of service, because they were operated with power from the Left Powerhouse. Three pump-generators are now pumping around the clock at Banks Lake, she added; the other three pump-generators were already out of service because of a transformer problem. All six of the pumps are out of service, because they were operated with power from the Left Powerhouse. (In other words, we have six pump-generators plus six pumps, but only three of the pump-generators are working.) It may take up to a year to restore the Left Powerhouse to normal operation, said Fodrea, adding that, in the meantime, Banks Lake is losing about a foot per week in elevation, due to reduced pumping capacity and irrigation demand.

At Hungry Horse, current project elevation is 3549 feet, Fodrea continued; the project had been releasing 6 Kcfs, but based on the most recent forecast, that has now been reduced to 5.2 Kcfs. The Upper Snake, Boise and Payette are still releasing their flow augmentation volumes; we're seeing 1.5 Kcfs out of Milner, 350 cfs from the Boise system and 700-800 cfs out of the Payette. Fodrea added that Upper Snake flows will begin ramping down the first week in September.

On the physical monitoring front, Ruth Abney reported that there have been some problems with the gauges at Grand Coulee; those problems have now been resolved. At Bonneville, the Camas/Washougal monitoring instrument went out for a few days; that problem is now fixed. Bonneville spill is now increasing. At Dworshak, TDG at Peck continues in the 109% range, Abney said. On the temperature front, Dworshak continues to release 48-degree water.

With respect to fish migration, Wagner said current subyearling chinook indices at Lower Granite are in the 1,900-2,800 range. McNary continues to see strong numbers of subyearling migrants, in the 50,000-70,000 range over the past week. It appears that collections remained surprisingly constant at Lower Granite, despite the fluctuation in pool elevation last week, said Bettin. Wagner added that about 600,000 subyearlings have passed Lower Granite to date; this is somewhat low, given the median forecast of 900,000, but given conditions in the system this year, that's not much of a surprise. The wild migration is following the forecast pretty closely; we're at about the 90% point in that migration, with a confidence interval of +/- 9%. In other words, said Wagner, it appears that run is nearly finished. At McNary, the wild Snake River subyearling forecast indicates that we're at about the 83% point in the run, he said. The median forecast there was 8 million fish; again, this run is continuing strongly at McNary, with 50,000-70,000 fish being transported there daily.

The current count of adult Snake river sockeye at Lower Granite is 268 fish, Wagner continued; in all likelihood, that's probably about it for the season. Bettin noted that 46 of these fish have shown up at Redfish Lake to date. Wagner added that fall chinook adults have started showing up at Bonneville; the count to date is about 350 fish, with 168 jacks.

VIII. New System Operational Requests.

On August 1, the Corps received SOR 2000-28, covering next week's Grand Coulee operations. This SOR, supported by ODFW, USFWS, WDFW, NMFS and IDFG, requests the following specific operations:

- Utilize water from Grand Coulee Reservoir for flow augmentation, reaching elevation 1282 feet on August 13. Given the present COE spreadsheet (8/01/00), this action is expected to produce flows in excess of a minimum

160 Kcfs. This 160 Kcfs flow is expected to be a minimum and no maximum flow is specified.

Yoshinaka spent a few minutes going through the details of this SOR, the full text of which is available via the TMT and FPC web pages.

Bettin said this elevation target will increase the amount of spill at McNary; he asked whether the salmon managers would prefer that the project operate outside of 1% operating efficiency, as an alternative to spill. In response to a question, Turner said current hydraulic capacity at McNary is about 164 Kcfs, although that could fluctuate slightly due to some planned unit outages for maintenance. If we operate outside 1%, however, we should be able to push all of the water through without spill, he said. After a brief discussion, Steve Pettit said he would prefer to spill, rather than going outside 1%.

In response to a question from Jim Nielsen, Bettin said the spill that is occurring at McNary is in the 6 Kcfs-8 Kcfs range. Nielsen said he would prefer to see the Corps shape the spill. Wagner said NMFS' preference would be to operate the four north units at McNary outside 1%. Yoshinaka said the Fish and Wildlife Service agrees with this assessment. So I'm hearing that operation of the four north shore units outside 1% is preferable to spill? Henriksen asked. Actually, Steve and Jim don't agree with that, said Yoshinaka.

Turner noted that current temperatures in the McNary collection channel are in the 70-degree range and appear to be on the rise. Nielsen observed that system mortality at McNary was about 4% on August 1, higher than has been seen in recent weeks. Turner responded that this was a barge loading day, and calculated mortalities are normally higher than on non-barge loading days because fish are moved from the raceways.

It was agreed to defer resolution of this SOR until after the TMT discussed two additional System Operational requests from the CRITFC tribes.

On August 1, the Corps received SOR 2000-C3, covering flows in the Columbia in August and September. This SOR, supported by the CRITFC tribes, requests the following specific operations:

- Grand Coulee: Provide weekly flows of 115 Kcfs from August 7-27, 113 Kcfs from August 28- September 3, 104 Kcfs from September 4-10, 100 Kcfs from September 11-17, 99 Kcfs from September 18-24, and 93 Kcfs from September 25-October 1.
- McNary: Provide weekly flows of 152 Kcfs from August 7-13, 149 Kcfs from August 14-20, 148 Kcfs from August 21-27, 142 Kcfs from August 28-September 3, 130 Kcfs from September 4-10, 125 Kcfs from September 11-17, 123 Kcfs from September 18-24 and 115 Kcfs from September 25-October 1.
- Banks Lake: Reduce pumping from August 21-September 17 to gain 125 KAF.
- Lake Roosevelt: Limit draft to 1282 ft. during September. Pass inflow at Grand Coulee from September 4-24 to maintain stable pools in the lower Columbia.

Kyle Martin spent a few minutes going through the specifics of this SOR, the full text of which is available via the TMT website. He noted that the overall intent of this SOR is to provide a gradual recession in lower river flows, rather than the usual artificial drop-off that generally occurs on September 1.

Was this SOR discussed this week at FPAC? Henriksen asked. No, Martin replied. We did have some opportunity to discuss the tribes' views on SOR 2000-28, however, said Yoshinaka.

On August 2, the Corps received SOR 2000-C4, on the subject of stable pools for the 2000 treaty fishery. This SOR, supported by the CRITFC tribes, requests the following specific operations:

- Bonneville Pool. Operate the pool within 1.0 foot from full pool (msl elevation 77 - 76)
- The Dalles Pool. Operate the pool within 1.0 foot (from msl elevation 159.5 - 158.5)
- John Day Reservoir. Operate the pool within 1.0 foot (from msl elevation 264.5 - 263.5)

Martin spent a few minutes going through the specifics of this SOR, the full text of which is available via the TMT website. He noted that, when pool elevations bounce around, nets become tangled or ripped from their moorings; the nets are very expensive to replace, on the order of \$600-\$800 per net. Last year, Colonel Mogren told us the Corps would try to keep the pools stable, Martin said; however, there were actually more violations of our request in 1999 than there were in 1998. The tribal fishermen earn the majority of their yearly income during this six-week tribal fishery, he said; pool fluctuations can have a major impact on their earning ability, hence the early submission of these SORs.

It sounds as though the reduction in Banks Lake pumping is occurring whether we want it to or not, given the pump outages at Banks Lake, Nielsen observed. Henriksen added that the Corps needs to know the dates in which the tribes want SOR 2000-C4 to be implemented; Martin replied that August 21-September 23 are the anticipated dates for the 2000 treaty fishing season. The fishery generally begins on Tuesday or Wednesday, and runs through Saturday at 6 p.m., he added.

This is somewhat awkward, given the differences between SORs 2000-28 and SOR 2000-C3, Henriksen said. Nielsen noted that SOR 2000-C3 does not provide the full draft of Grand Coulee specified in the Biological Opinion. In response to a question from Wagner, Martin said the intent of the CRITFC SORs is to strike a balance between flows for juveniles and adults, and maintaining stable pools for the tribal fishery. Having more water in the river in September should also help mitigate the temperature situation in the river in September, he added – the 30-90 day forecast is still calling for above-average temperatures through the end of August.

The group discussed what supporting evidence exists for CRITFC's contention that this requested operation would improve the water temperature situation significantly in September, and for their contention that this operation would significantly improve conditions for adult migrants. Ultimately, the salmon managers requested a brief caucus to discuss the various SORs under consideration at today's meeting.

When the meeting resumed, Yoshinaka said the salmon managers and Martin had discussed all SORs, and came to agreement on SOR 2000-C4 – all of the agencies support that SOR. Bear in mind that the agreement that has been in place since 1996 between the Corps and CRITFC is that the Corps will operate Bonneville pool near the top foot and a half during the treaty fishing season, said Henriksen; typically, the tribe faxes us information 48 hours ahead of the start of the fishing time. We're also in agreement with the tribes on operations at the other two pools, said Yoshinaka.

With respect to the other two SORs, on 2000-28, the agencies in support of that SOR are still requesting that Grand Coulee be drafted to elevation 1282 feet next week, said Yoshinaka – essentially, our position is unchanged. On the question of operating outside 1% or spill, we now support spill, and request that it be shaped into the evening hours, following the spill pattern in the Fish Passage Plan, he added.

We were not able to reach agreement with the tribes on the question of their SOR 2000-C3 versus our SOR 2000-28, Yoshinaka said. The tribes still want to see their SOR 2000-C3 implemented, Martin said, adding that this issue will likely need to be elevated to the IT. Wagner said NMFS is willing to elevate this issue on the tribes' behalf.

Given their support for the operations contained in this SOR, does NMFS no longer feel we should maximize transport at McNary? Turner asked. I need to talk to Jim Ceballos at that, Wagner replied. And what flow are you looking for at McNary? Fodrea asked. The BiOp objective is 200 Kcfs, Yoshinaka replied – I don't think we're going to get there, but the higher, the better.

Bettin observed that, given the relative survival of in-river migrants vs. transported fish, it doesn't appear to him that increasing spill at McNary is the best option for fish. Also, said Henriksen, what happens to the fish after August 13? We could hit elevation 1280 at Grand Coulee with two weeks to go in August, at which point we'll see a sharp dropoff in lower river flows, said Bettin.

I hear a desire to raise this issue to IT, said Henriksen. Can we talk for a moment about what our expectation is from that IT discussion, given the fact that NMFS will make the ultimate determination at IT? There is a range of operations that could be arrived at, Wagner said – a number of outcomes are possible. The policy call in this case is whether we are still trying to maximize transport at McNary, said Bettin – if we implement this requested operation, we will not be

doing that. From a procedural standpoint, is there some value to asking the IT to make this decision, rather than making it here? Henriksen asked.

What is the operating agencies' recommendation? Nielsen asked. I would be more comfortable with a flow target, rather than a specified elevation, said Fodrea. We want to increase Grand Coulee outflow over inflow, Nielsen replied. Turner said it would make more sense, to the Corps, to set a flow target of 165 Kcfs at McNary, maximize transport and avoid any spill at the project.

After a few minutes of additional discussion, it was agreed to raise this issue to the Implementation Team. Nielsen noted that the BiOp's seasonal flow target at McNary is in excess of hydraulic capacity at that project; what are the implications of that fact on the Corps' arguments on this issue? he asked. When the 1995 Biological Opinion was developed, it was noted that the flow target was likely to be met very rarely in August, Henriksen replied. Still, it could occur, said Nielsen, so why would the Corps argue that this operation could have negative impacts on the fish? The interpretation is that August flow should be within powerhouse capacity, and would maximize transport; I think we'll have to agree to disagree on that point, said Henriksen.

Nielsen said it may be fallacious to argue that this operation will necessarily decrease transportation at McNary; if we move more fish to that project through increased flow, the actual number transported may not decrease, even if more fish are spilled, he said.

The group devoted a few minutes of additional discussion to how to word the issue to be elevated, an exercise which ultimately resulted in the following wording:

"Should the action agencies implement an action/operation which will result in flow in excess of hydraulic capacity at McNary, resulting in spill which could potentially decrease transport at the project? The IT should refer to the two attached SOR; in resolving this issue, a determination of the coming week's operation needs to be arrived at, in order to resolve the conflicts between the two SORs."

Martin asked how this issue statement gets at the issue of the conflict between SORs 2000-28 and 2000-C3. By definition, SOR 2000-C3 would not result in spill, Wagner replied. Perhaps we can also attach the two SORs to the issue statement, and direct the IT to review both, Abel suggested.

The group devoted a few minutes of additional discussion to the fact that the action agencies have requested that a flow target be established for next week, while the salmon managers are requesting that Grand Coulee be operated to a specific elevation target, and whether or not the IT should be asked to weigh in on this issue. Henriksen and Fodrea argued that it is not appropriate to elevate this issue to the IT; we're the operating agencies, said Fodrea, and we're telling you what we need. You don't need the IT to answer that question, said Henriksen; we're giving you that response right now. It's better to have a flow objective if the object is to put flow on fish, and shape the available flow as best we can, she said; our preference is that you set a flow objective, rather than an elevation target. The salmon managers would prefer to set an elevation target, rather than a flow target, said Yoshinaka.

Ultimately, Fodrea suggested a compromise: specify a target flow of 172 Kcfs at McNary, with a draft limit of 1282 feet at Grand Coulee, assuming that the IT responds in the affirmative to the above policy question. If the answer from IT is no, said Bettin, we would operate in such a way that hydraulic capacity at McNary is not exceeded – perhaps according to SOR 2000-C3. The salmon managers requested a brief caucus to discuss this issue.

When the meeting resumed, Abel restated the suggested compromise above. Yoshinaka said that, in caucus, the salmon managers had decided to specify a flow target of 175 Kcfs at McNary for the week ending August 13, with a draft limit of 1282 feet at Grand Coulee as a secondary objective. The action agencies indicated that they would be willing to implement this operation, if the IT answers the above policy issue in the affirmative, although Bettin noted that the IT may decide to change this operation. It was agreed to add a summary of this agreement as background information for the issue statement when it is submitted to IT.

And if the IT answers no? Abel asked. Then the flow next week will be 154 Kcfs at McNary, said Wagner. Abel said the IT will be asked to convene a conference call to discuss this issue later this afternoon.

IX. Recommended Operations.

Recommended operations were addressed in the previous agenda item. .

X. Other.

A. Pierce Island/Hardy Creek Field Trip. Abel reminded the group that September 7 was the date tentatively set for this excursion; Turner said he has reserved the Bonneville project office conference room from 9 a.m. to noon on that date. Yoshinaka and Nielsen said that date works for WDFW and for the personnel who will be leading the tours of the stranding site and the Hardy Creek site. It sounds, then, like the trip will happen on September 7, Abel said.

XI. Next TMT Meeting Date.

The next meeting of the Technical Management Team was set for Thursday, August 10, at the Corps' Northwestern Division headquarters. It was agreed that this meeting will be a face-to-face meeting. Meeting notes prepared by Jeff Kuechle, BPA contractor.

TMT ATTENDANCE LIST

AUGUST 3, 2000

Jacqueline Abel	Facilitator	
Ruth Abney	COE	
Scott Bettin	BPA	
Scott Boyd	COE	503/808-3943
Dick Cassidy	COE	
Ken Dragoon	PaciFiCorp	
Kim Fodrea	Reclamation	
Richelle Harding	D. Rohr & Associates	
Tim Heizenrater	Enron	
Cindy Henriksen	COE	503/808-3945
Robyn MacKay	BPA	
Kyle Martin	CRITFC	
Rudd Turner	COE	503/808-3935
Maria Van Houten	Enron	
Paul Wagner	NMFS	

Mary Yoshinaka

USFWS

On Phone:

Name	Affiliation	Phone
Ed Bowles	IDFG	
Margaret Filardo	FPC	
Phillip Irvin	Seattle City Light	
Dusica Jevremovich	FPC	
Nengjin Liu	Idaho Power	
Christine Mallette	ODFW	
Kurt Miller	PGE	
Jim Nielsen	WDFW	
Steve Pettit	IDFG	
Steve Wallace	PacifiCorp	

TECHNICAL MANAGEMENT TEAM

BOR: *Kim Fodrea\Pat McGrane*

NMFS: *Paul Wagner\Chris Ross* BPA: *Scott Bettin\Robyn MacKay*

USFWS: *Marv Yoshinaka\Bob Hallock\Susan Martin*

OR: *Christine Mallette \Chuck Tracy* WA: *Jim Nielsen* ID: *Ed Bowles\Steve Pettit*

MT: *Jim Litchfield* COE: *Cindy Henriksen\Rudd Turner\Dick Cassidy*

COLUMBIA RIVER REGIONAL FORUM

TECHNICAL MANAGEMENT TEAM

RE: August 10, 2000 Meeting

FACILITATOR'S NOTES ON FUTURE ACTIONS

Facilitator: Jacqueline Abel

The following is a list of items that the Technical Management Team (TMT) discussed at its last meeting that will require future action or discussion, some of them before the next TMT meeting. For a more complete discussion of agenda items, see the meeting minutes when they are posted on the TMT homepage.

1. MINUTES. No changes to the minutes of August 3 were noted at today's meeting. If anyone has any corrections or additions to the minutes of the TMT meeting of August 3, they need to send them to Cindy by 5 PM on August 11.
2. McNARY TEMPERATURE TEST. A preliminary report of the test results was discussed. This item will be put on next week's agenda for a further report and to decide if a recommendation can be made for the future, based on this test.
3. SYSTEM EMERGENCY ON AUGUST 9. TMT discussed the system emergency that BPA declared yesterday at 2:00 PM, for approximately three hours, because of a wildfire in Montana that forced a generating plant off line. The notice via email appeared to work well for TMT members. Cindy asked Scott to also send an email notice at the end of an emergency situation, and Scott agreed to do so.
4. EMAIL LIST FOR EMERGENCY NOTICES. TMT agreed they need to develop an accurate email list to use for emergency notification, and that it should include alternates to notify in addition to regular TMT members. Scott agreed to compile this list, If every TMT member will send him an email this week with addresses for themselves and any alternate to get emergency notices.
5. PRIORITIZATION LIST of FCRPS Operations Which May Be Used During a NW or SW System Reliability Event. TMT spent some time reviewing the priority list that they developed on their conference call of July 31, and which was subsequently revised at the August 3 TMT meeting. NMFS had a number of changes. Robyn agreed to make the changes suggested, and to distribute a new list by emailing it to the COE to put on the TMT homepage. Jim Nielsen reminded TMT of the July 28 letter he sent to Paul Wagner, and that the agencies designated in that letter do not support the reduction of spill in the lower river.
6. FISH MITIGATION MEASURES. Chris agreed to review what has occurred and whether NMFS will recommend additional protection measures. Scott agreed to provide a list of emergency operations that have occurred since the IT

meeting reviewed the earlier power system emergency. He will provide that to Chris (and to Cindy to post on the homepage) by next Monday. This item will be on next week's agenda.

7. TMT PROTOCOL FOR DECLARING EMERGENCY OPERATIONS. Robyn distributed some draft language to revise the protocols attached to TMT's Water Management Plan (April 4, 1997), which was an assignment from last week's TMT meeting. Cindy will put this draft in legislative language and post it on the TMT homepage. TMT members agreed to then discuss the revisions at the next meeting.

8. REVIEW OF OPERATIONS. TMT members discussed their understanding of the terms "target" and whether or not that means some leeway (such as plus or minus 5 KCFS) in the weekly operations' objective. It was agreed that this is a good item to explore during the TMT year end review. It was noted that the 1996 Water Management Plan might have contained some language about this. It was also agreed that it would be useful to have a presentation about how the scheduling process works at a future meeting,

and to have a BPA scheduler explain the process in detail.

9. RECOMMENDED OPERATIONS. After discussions of SOR #2000-29, BPA responded that they could not agree to the requested operation, although they will try to come as close as they can to the requested flow objective of 160 KCFS at McNary for next week. BPA and BOR both stated that they intend to operate through August to draft Coulee to 1280 elevation by the end of August. [For a more complete summary of the discussion, please see the minutes to be posted Monday.]

10. NEXT MEETING. TMT agreed to meet at the COE office next week for an "in person meeting". The conference call-in line will be available for those who cannot attend in person.

AGENDA items (in addition to the regular items involving system operations) for August 17 noted at this meeting included:

- * McNary Temperature Test (COE)
- * Language to add to the emergency protocols
- * Status of email list to use for emergency notification
- * Discussion of whether NMFS will recommend Fish Mitigation Measures
- * Libby operations in September should be on agenda either August 17 or 24

TECHNICAL MANAGEMENT TEAM

MEETING NOTES

August 10, 2000

**CORPS OF ENGINEERS NORTHWESTERN DIVISION OFFICES – CUSTOM HOUSE
PORTLAND, OREGON**

DRAFT

I. Greeting and Introductions

The August 10 Technical Management Team meeting, held at the Custom House in Portland, Oregon, was chaired by Cindy Henriksen of COE and facilitated by Jacqueline Abel. 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.

Abel welcomed everyone to the meeting, then led a round of introductions and a review of the agenda.

II. Review of Minutes from August 3 TMT Meeting.

Abel asked that any changes to the minutes from the last TMT meeting be submitted to Henriksen by close of business Friday, August 11.

III. McNary Temperature Test Update.

Paul Hoffarth of Washington Fish and Wildlife reported that the last two "units-off" test days, August 5-6, were affected by moderate winds. In order to calculate the temperature differences between the "units on" and "units off" days, Hoffarth explained, we basically had to throw out any days when wind speeds exceeded 4 m.p.h. In general, air temperatures were higher and winds lower during the units-on days; overall, saw about a 1-degree difference in temperatures in the collection the facility when the units were off. More importantly, he said, we saw a 1 degree to 1.5-degree decrease in peak daily temperatures when the units were off. What did the wind effects do? Henriksen asked. When you have winds of 4 mph or greater, you see thorough mixing from top to bottom in McNary, Hoffarth replied – in other words, when the winds were high, it negated the effects of having the units on or off, and there was no difference in temperatures. He added that the results from the test are now available on the TMT web site.

Are there plans to go through the test results with the folks at Walla Walla District? Henriksen asked. I haven't been able to reach Dave Hurson yet, Hoffarth replied. I guess the expectation is that the Corps will develop a proposal for future unit operations at McNary once we have a chance to go through this information, said Henriksen. Should we put that on a future agenda? Abel asked. I think there is a little more to come on this, data-wise, Henriksen replied.

Hoffarth reported that McNary Unit 2 is currently out of service for maintenance; project personnel have noted some fairly significant warming in front of Unit 1, as well as increased mortality. Collection numbers continue to be significant, said Hoffarth; given that fact, the TMT may want to consider shutting down Unit 1 this year, if power demand allows. But when wind is above 4 mph, unit operation makes no difference? Jim Litchfield asked. Correct, Hoffarth replied. In response to another question, Hoffarth said winds were well above 4 mph for five of the 11 test days. In other words, he said, on a given day, there is a 40-50% chance that winds will be strong enough to induce complete mixing in the forebay. In response to a question from Henriksen, Hoffarth said he will work with Dave Hurson to develop some operational recommendations within the next week. It was agreed that the TMT will schedule further discussion on this topic at next week's meeting. In response to another question, Hoffarth said it is his understanding that while fish condition is deteriorating, it is probably no worse than it was last year at this time.

IV. McNary Flow Objective – August 3 IT Recommendation.

Henriksen reported that, at last week's IT conference call, after considering the issues raised by TMT (flow objective at McNary for week ending August 13, maximum transport vs. meeting the flow objective), the IT responded with a "no." The IT explored some other operational alternatives, and ultimately recommended that the flow objective at McNary be 175 Kcfs, with Grand Coulee drafting to elevation 1282 feet, Henriksen said.

Where are we currently, with respect to McNary flow and Grand Coulee reservoir elevation? Marv Yoshinaka asked – Grand Coulee appears to be staying at about the same elevation it was last week, and week-average flows are currently only about 155 Kcfs. Yoshinaka added that Chris Ross called the operating agencies, and discovered that they planned to go to a weekly average of 175 Kcfs and draft Grand Coulee to elevation 1282 this week. Yoshinaka asked what the present McNary flow and Grand Coulee elevation conditions were. Grand Coulee is releasing 210 Kcfs today, and the project is currently at elevation 1284.9 feet, Scott Bettin replied, adding that it's pretty common for Grand Coulee not to come up on Monday. What's the likelihood of meeting the IT-recommended flow target for this week? Jim Nielsen asked. We will not meet the 175 Kcfs target, Bettin replied. It appears you're operating more toward a pass-inflow operation at Grand Coulee, said Nielsen; what we were told on Tuesday apparently is not correct. Hopefully we'll talk about all of this when we discuss this week's SOR, Bettin replied.

Kim Fodrea said project personnel are working on getting three more units up at Grand Coulee, but most of the left powerhouse is still down – current hydraulic capacity at the project is about 200 Kcfs. There are still only three pump generators available for Banks Lake, she said; the equipment we need to get more of the generators back on line came in this morning. We're working to get that equipment installed, and should have a couple more pumps on line by next week, Fodrea said. In response to a question, Craig Sprinkle added that current Banks Lake elevation is 1565.7 feet.

V. Power System Emergency Update.

Bettin said yesterday, there was a wildfire under one of one of the 500 kV lines coming out of Colstrip, which then tripped off. When that occurred at 2 p.m., lost 1,000 MW of generating capacity; were able to make that up ourselves, with the help of some of the utilities. The line came back on by 4:20, off again at 4:40, and back on again shortly after 5. As the wind comes back up, the fire may cause further problems, Bettin said; we're monitoring the situation carefully. The emergency was of a very short duration; unless the wind really picks up, we don't anticipate any further problems. The email notification Scott sent out worked well, Yoshinaka observed. NMFS also appreciated the notification, said Chris Ross. In response to a question from Jim Litchfield, Bettin said there was a chance that Libby generation would have to be increased for local service in response to the emergency; that didn't prove to be necessary, however.

VI. Comments on TMT Emergency Operations Protocols.

Robyn MacKay distributed her draft revisions to the TMT Guidelines, intended to reflect the agreement reached at last week's TMT meeting regarding emergency notification. Henriksen said she will email this language to the full TMT prior to next week's meeting; we can then attempt to finalize this language at next week's TMT meeting, she said. Litchfield suggested that a formalized email address list be developed for use during an emergency; there was general agreement that this would be useful. It was agreed to discuss who needs to be on this list at the next TMT meeting; in the interim, it was agreed that anyone who wants to be on the emergency notification list will email their (and their alternates') email address to Bettin prior to next week's meeting.

Chris Ross said that, with respect to the current prioritized list of emergency FCRPS actions, based on the most recent turbine passage survival data, NMFS recommends that Item 14 (John Day reduce daytime spill to zero) be moved up the list to Item 10. The other recommendation is that Item 17 become "Reduce spill at John Day to 30%;" we can then add a new Item 18, "Reduce John Day spill to zero," said Ross. In other words, he said, NMFS is requesting that we add a step at John Day. I'll make those changes, said MacKay. Henriksen said she will post the revised prioritized list to the TMT web page once she receives it from MacKay.

Nielsen reiterated, for the record, that WDFW does not support reducing spill for any reason. The Fish and Wildlife Service has the same opinion, Yoshinaka said. In response to a question, Nielsen said his July 28 letter is in the record, and should be sufficient notification that the salmon managers do not agree with reducing spill. There have also been reductions, in the last two weeks, in BiOp mitigation measures, Nielsen added; it would be helpful to have a list of those reductions, as well as a report on what, if anything, has been done to mitigate for those reductions – providing additional hours of spill on another day, for example. I think the IT would be the more appropriate forum for that discussion, said Bettin. Ross said NMFS will look at what occurred, and attempt, with the assistance of the other salmon managers, to determine whether NMFS will recommend additional compensation measures. This should happen next week, he added; in the interim, he said, it would be helpful if BPA could provide a list of the emergency actions taken which deviate from the BiOp operations so far this summer. Bettin and MacKay said BPA will provide such a list. We'll provide a further report at the next TMT meeting, said Ross. We'll discuss it at next Tuesday's FPAC conference call as well, said Nielsen.

VII. Ice Harbor Minimum Spill Level.

Scott Boyd said the consensus at FPOM is that the current operation appears to be working well so far, but they want another day or two to assess it. Bettin added that the minimum spill level is currently 15 Kcfs when spill is occurring; Ross asked whether there is a way to shape the spill, when it occurs, such that there are fewer hours of zero spill. I doubt it, said Bettin; there just isn't enough water to allow us to do that. He added that, in general, the operating

agencies are trying to implement the 15 Kcfs of spill in two-hour blocks. We'll continue to monitor the situation, said Ross; the best operation we've seen is when the 15 Kcfs of spill is maintained even when the one unit is being operated.

VIII. Current System Conditions.

Yoshinaka reiterated his request for an explanation of operations for the week ending August 6. Bettin said that, in past years, there has been a +/- 5 Kcfs flow band around the target flow; the actual flow last week was about 5 Kcfs lower than the target of 165 Kcfs, and the ending Grand Coulee reservoir elevation was 1285. It appears there was some volume available at Grand Coulee to keep flows higher, Yoshinaka said. Our understanding was that the +/- 5 Kcfs flow band was in effect, said Fodrea; I can see now that the actual flows were lower than you expected, and perhaps we should talk about what is an acceptable flow band.

Our intent was that 165 Kcfs be a minimum, said Ross – if it was exceeded, that would have been acceptable to us. In this kind of a water year, our resources are stretched, Fodrea replied; we probably erred on the low side. This week, we would like to see you meet the objective, said Yoshinaka; again, it appears there was some storage available to meet the 165 Kcfs target. They may have chosen to fill McNary slightly, said Bettin; I'm not sure why that happened, but the way the system works, the schedulers have the final say about what is actually delivered, and you just hope that the weekly average adds up. In response to a question from Nielsen, Bettin said the schedulers were instructed to meet the 165 Kcfs flow target.

It sounds, then, like the salmon managers are saying no to the idea of the +/- 5 Kcfs flow band, said Fodrea. Bettin observed that there have been some "plus" weeks this season as well, reiterating that it is difficult to deliver a precise flow target. Perhaps we should agree to disagree on this point, said Fodrea – I can't promise to meet a target quite that precisely. It was agreed to revisit this topic during the TMT's year-end review. Yoshinaka added that, at some point after the season, it would be helpful if the TMT could receive an explanation of exactly how the scheduling process works.

It would also be helpful if we could receive a written explanation of exactly what happened last week, said Yoshinaka. I'm not sure we can provide that, Fodrea replied. We're trying to meet the target, said MacKay, but we rarely nail it – that's why it's an objective, not a hard constraint. Still, it would be helpful if you could provide a written explanation of Reclamation's understanding of what last week's operation was supposed to be, said Yoshinaka. You'll get that in the TMT meeting minutes, Fodrea replied. Nielsen suggested that it may be useful to review the flow objectives week by week, and compare them to the actual flows shown in the spreadsheet. That information is available on the web site, Henriksen replied.

Most of the time we do meet our objectives, said Bettin – in this particular case, I think the salmon managers would be hard-pressed to demonstrate that 5 Kcfs, plus or minus, would have a significant biological impact. Again, the schedulers believe they have a +/- 5 Kcfs flow band; if you asked them, they would probably tell you that they did OK last week, with respect to the flow target. Ross noted that this is the first time he has heard of the +/- 5 Kcfs flow band. Perhaps we can ask someone to look into where that came from, and report back at a future TMT meeting, Abel said.

With respect to this week's operation, said Bettin, we have been attempting to meet the 175 Kcfs target; however, because there is the potential for another power system emergency in California next week, the decision has been made not to reduce Grand Coulee elevation much during the rest of this week. He added that BPA received a Presidential order after last week's emergency, directing BPA to do everything it can to avoid a repeat of that situation; there is some discussion ongoing about exactly what it means to our current operations.

The bottom line is that we're not going to be able to meet the 175 Kcfs flow target this week, and are shooting instead for 165 Kcfs, Bettin said. In response to a question, Bettin said the Presidential order was not available prior to the August 3 IT conference call. We don't feel it's prudent, at this point, from a shaping standpoint, to pin ourselves down to a +/- 5 Kcfs flow band, said Bettin; we need some flexibility, through the end of August, to try to meet both fish and power needs.

So actual flows at McNary may be higher or lower than 165 Kcfs, depending on what happens? Litchfield asked. That's correct, Bettin replied. What, then, is the point of the TMT continuing to meet, if the operating agencies have already

decided on what operations are going to be through the end of August? Nielsen asked. I would agree, said MacKay; BPA pretty much has to commandeer the system through the end of August in order to maintain West Coast power system reliability.

Henriksen noted that, when Bettin and MacKay say "we," they are not referring to the Corps – the Corps' expectation was that flows last week would be 165 Kcfs, and this week, that they would be 175 Kcfs. We respect the TMT process, said Bettin; however, the reality is that we need the flexibility to operate the system to maintain system reliability. He assured the TMT that Grand Coulee will be drafted to elevation 1280 by August 31; the full volume for salmon flow augmentation will come out this year.

Fodrea said Reclamation shares the salmon managers' concerns, but isn't going to stand in the way of BPA's system reliability concerns. Nor will the fish, apparently, said Nielsen. Margaret Filardo noted for the record that the operation BPA intends to impose is contrary to anything the salmon managers would recommend.

So what you're basically saying is BiOp fish flow measures are being implemented to operate the system for power, and that NMFS has agreed to this? Michelle DeHart asked. That is my understanding, Bettin replied. Ross said he is not aware that NMFS has agreed to this operation. We have informed them that we are going to do this, said Bettin; those conversations have occurred at the policy level, however, and I'm not privy to them.

MacKay clarified that BPA's concern is maintaining west coast reliability, not operating the system to meet BPA load. That raises an interesting point regarding NMFS' BiOp consultation, said Nielsen – it appears that NMFS should be looking at the load situation up and down the west coast, and its effect on system operations. That's a valid comment, Bettin replied.

It appears that week-to-week BiOp operations are being suspended, said Yoshinaka. We will still try to meet your weekly objectives as best we can, while ensuring that we have enough storage left to keep enough water in the system to meet our other obligations, MacKay replied. I'm hearing that BPA is willing to listen to our week-to-week recommendations, said Ross. That's not good enough for me, Nielsen replied.

Fodrea said there have been rumors that Reclamation is considering drafting Grand Coulee to elevation 1278 this summer; those rumors were, in fact, correct, but yesterday, Reclamation made a final decision that the draft limit of 1280 will stand this year, because of tribal concerns, system reliability concerns and the fact that a draft to elevation 1278 is not in the current BiOp. In response to a question from DeHart, Fodrea said Reclamation might have to consider drafting Grand Coulee below elevation 1280 if a power system emergency occurs. The State of Washington does not support drafting Grand Coulee below elevation 1280 this year, Nielsen said. Fodrea noted that Reclamation would not support continued draft of Grand Coulee at a rate of 1.5 feet per day once the project reaches elevation 1280. Kyle Martin said the CRITFC tribes agree wholeheartedly with Reclamation's wise decision; the Colville Tribe and the Spokane Tribe also support the 1280-foot elevation limit at Grand Coulee in 2000.

What is the planned operation, in terms of refill of Banks Lake? Nielsen asked. We hope to get the additional pumps on line before Banks Lake reaches elevation 1265, Fodrea replied; once we have them back on-line, we will make a decision about when, and in what magnitude, pumping would increase. I would suggest that you have some discussion at TMT before you make that decision, Nielsen said; it was so agreed.

IX. New System Operational Requests.

On August 8, the Corps received SOR 2000-29, on the subject of the McNary flow target and Grand Coulee reservoir elevation for the week ending August 20. This SOR, supported by ODFW, USFWS, WDFW, NMFS and IDFG, requests the following specific operations:

- Draft Grand Coulee Reservoir to a minimum elevation of 1281 feet as needed to try to meet a weekly flow objective of 160 Kcfs at McNary for the week ending August 20.

Yoshinaka spent a few minutes going through the details of this SOR and its justification; please see the full text (available via the FPC and TMT web sites) for further details.

What percentage of the run has passed? Bettin asked. It's in the 90% range at McNary, Ross asked. You also need to keep in mind the numbers of Snake River fish that are still passing, said Filardo; we're also seeing very high numbers of fish for this time of the season at McNary. Most of those fish are being transported, Bettin observed. It's actually only about half of the fish that are being transported, said Ross; the remainder are migrating in-river. Still, out of a total migration of 10 million, 30,000 per day is pretty tiny, Bettin observed. As you and everyone else are aware, most of the fish that are migrating now are listed stocks from the Snake, Filardo said.

In response to the SOR, said MacKay, I don't know that we will be able to meet a 160 Kcfs flow target next week, but we will do our best, given our system reliability concerns – we understand that the salmon managers would prefer to move as much of the augmentation volume out as early in the month as possible. From Reclamation's perspective, we will come as close to the target as we can, Fodrea said; it is unlikely that we will come within 5 Kcfs, however. We really don't know what kind of flows we'll see, said MacKay; we don't know exactly what we'll be getting from Canada, and again, the overall goal is to make the Grand Coulee storage last such that the project reaches elevation 1280 on August 31. We could come very close to meeting this request, said Bettin; at this point, however, it's difficult to say exactly how next week will play out. Basically, we're at a point where maintaining flexibility in the system has to take precedence over meeting a specific flow target.

At this point, the salmon managers requested a brief caucus. When the meeting resumed, Yoshinaka said the salmon managers had discussed the SOR and the current situation; it is our belief that we still need flows for fish in the Lower Columbia, so we're sticking with the SOR request, with the understanding that BPA has other operations in mind, he said. As of Tuesday, he added, our understanding was that the operators were going to try to meet the 175 Kcfs flow target; it was a surprise to learn about the Presidential order at today's meeting. There was some discussion of the timing of the receipt of the presidential order by the operating agencies; Bettin replied that, while the order is dated August 3, there was a great deal of confusion about exactly what it meant within BPA, and BPA requested some additional clarification before it could be implemented.

Yoshinaka said he would hope that energy conservation in California would be the first response to next week's projected power system emergency; Bettin replied that mandatory conservation will be imposed if a Stage 3 emergency is declared. At this point, he said, California is planning to declare a Stage 2 emergency next week. California's first priority is to avoid going to rolling blackouts, MacKay added. It is our goal to keep any of the western states from having to impose rolling blackouts, Bettin added.

We have heard BPA's and Reclamation's response to SOR 2000-29, said Abel; do we need to elevate this issue to the IT? What would happen if the IT recommends that the SOR be implemented? she asked. We would attempt to do so, but we could not guarantee that the requested flow target would be met, Bettin replied – that comes from Judi Johansen herself. After a few minutes of additional discussion, no one expressed a desire to elevate this issue to the IT, given the fact that the outcome of IT debate would likely be the same outcome that has been arrived at today.

It sounds, then, as though it will not be possible to meet the 175 Kcfs flow objective this week, or the Grand Coulee draft target of 1282 feet, said Yoshinaka. It sounds as though it is unlikely that we will meet either the flow target or the 1281-foot draft limit next week as well, said Ross. We might be able to meet those targets, but at this point, we just don't know, Bettin replied. However, we will achieve elevation 1280 at Grand Coulee by August 31, Fodrea added.

In response to a question, Fodrea said the Upper Snake flow augmentation water continues to come down through the system; Hungry Horse outflow has been reduced further, to 4.4 Kcfs, in order to avoid overshooting the project's August 31 ending elevation of 3540 feet. Litchfield said Montana may have some further recommendations about how this year's Hungry Horse rampdown should be implemented. We also need to talk further about how – and when – to ramp Libby down from the 8 Kcfs flow level, Litchfield added. We can add that to an agenda some time in the next week or two, Henriksen said – the Corps will generate some Libby rampdown scenarios, and will post them to the web site.

X. Recommended Operations.

Recommended operations were outlined during the previous agenda item.

XI. Next TMT Meeting Date.

The next meeting of the Technical Management Team was set for Thursday, August 17, at the Corps' Northwestern Division headquarters. It was agreed that this meeting will be a face-to-face meeting. Meeting notes prepared by Jeff Kuechle, BPA contractor.

TMT ATTENDANCE LIST

AUGUST 10, 2000

Jacqueline Abel	Facilitator	
Scott Bettin	BPA	
Scott Boyd	COE	503/808-3943
Dick Cassidy	COE	
Kim Fodrea	Reclamation	
Russ George	Consultant	
Richelle Harding	D. Rohr & Associates	
Cindy Henriksen	COE	503/808-3945
Jim Litchfield	Consultant (Montana)	
Robyn MacKay	BPA	
Christine Mallette	ODFW	
Kevin Nordt	PGE	
Mike O'Bryant	Columbia Basin Bulletin	
Chris Ross	NMFS	
Maria Van Houten	Enron	
Marv Yoshinaka	USFWS	
Nancy Yun	COE	

On Phone:

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Name	Affiliation	Phone
Michelle DeHart	FPC	
Margaret Filardo	FPC	
Steve Hemstrom	AVISTA Utilities	
Paul Hoffarth	WDFW	
Phillip Irvin	Seattle City Light	
Dusica Jevremovich	FPC	
Nengjin Liu	Idaho Power	
Kyle Martin	CRITFC	
Pat McGrane	Reclamation	
Jim Nielsen	WDFW	
Steve Pettit	IDFG	
Bill Rudolph	NW Fish Letter	
Craig Sprankle	Reclamation	
Glen Traeger	AVISTA	
Steve Wallace	PacifiCorp	

TECHNICAL MANAGEMENT TEAM

BOR: *Kim Fodrea\Pat McGrane*

NMFS: *Paul Wagner\Chris Ross* BPA: *Scott Bettin\Robyn MacKay*

USFWS: *Marv Yoshinaka\Bob Hallock\Susan Martin*

OR: *Christine Mallette \Chuck Tracy* WA: *Jim Nielsen* ID: *Ed Bowles\Steve Pettit*

MT: *Jim Litchfield* COE: *Cindy Henriksen\Rudd Turner\Dick Cassidy*

COLUMBIA RIVER REGIONAL FORUM

TECHNICAL MANAGEMENT TEAM

RE: August 17, 2000 Meeting

FACILITATOR'S NOTES ON FUTURE ACTIONS

Facilitator: Jacqueline Abel

The following is a list of items that the Technical Management Team (TMT) discussed at its meeting on August 17, and that will require future action or discussion, some of them before the next TMT meeting. For a more complete discussion of agenda items, see the meeting minutes when they are posted on the TMT homepage.

1. MINUTES. Marv noted a change to the minutes of August 10 meeting, and he will send wording for this correction to Cindy by the end of the day on August 18. Any other corrections or additions to the minutes should also be sent to Cindy by 5 PM on August 18.

2. McNARY TEMPERATURE TEST. TMT discussed the McNary Temperature test results. Some further coordination needs to take place with the Walla Walla district and with others, before a recommendation can be made for the future. One possibility might be that a recommendation become part of next year's Fish Passage Plan. This item will be on TMT's agenda next week or on later agenda, after that coordination has taken place.

3. TMT PROTOCOL FOR DECLARING EMERGENCY OPERATIONS. TMT discussed draft language to revise the protocols attached to TMT's Water Management Plan (April 4, 1997), which was posted on the TMT homepage. As to Section E. 2., it was noted that the word "of" needs to be inserted in the first sentence, after the word "one" in the underlined proposed new language. There was agreement that an effort should be made to be more specific as to the "Additional emergency actions will be taken as necessary" which is the new second sentence in the same section. Cindy agreed to write some more specific language on this point to email out to the group before next week's meeting. Christine noted, that as long as changes are being made, she had a suggested change to Section F. 2. In the fourth line of that section, she proposed that changing the word "consistent" to "inconsistent" would be more accurate and understandable. Cindy will also make this revision, and any other changes necessary in Section F where the language about "consistent" appears. This will also be in the new version that she will send out before the next meeting. TMT will discuss the revisions next week.

4. EMAIL LIST FOR EMERGENCY NOTICES. Scott Bettin has received email addresses from most TMT members to create an email list for emergency notices. Ed Bowles, Jim Nielsen, and Jim Litchfield will email Scott their email information this week, including any alternates who should also get emergency notices. When Scott has a complete list, he will send out a test message to everyone on the list.

5. PRIORITIZATION LIST of FCRPS Operations Which May Be Used During a NW or SW System Reliability Event. Kim noted that she had given Robyn some language about item #8 to clarify Grand Coulee's role in the priority list, that did not appear on the most recent version of this priority list. When Robyn returns, it should be added.

6. RECOMMENDED OPERATIONS. No SORs were received this week. BPA indicated that they intend to operate as indicated in the spreadsheet, as much as is possible.

BOR said that Hungry Horse ramp down may start late next week. They will send out their plan to do so, via email to TMT, as soon as they can. Jim Litchfield is to coordinate with Kim about Montana's tests.

7. NEXT MEETING. TMT agreed to meet at the COE office next week for an "in person meeting". The conference call-in line will be available for those who cannot attend in person.

AGENDA items (in addition to the regular items involving system operations) for August 24 noted at this meeting included:

- * McNary Temperature Test (COE), if a recommendation is ready
- * Revised version of language changes to the Protocols for Emergency

Operations

- * Discussion of whether NMFS will recommend Fish Mitigation Measures
- * Libby operations in September

REMINDER: TMT is planning a field trip on September 7, 2000, to Hardy Creek and Pierce Island. A meeting room has been reserved at Bonneville Dam and field personnel will be ready to conduct a tour. Please put this on your calendar.

TECHNICAL MANAGEMENT TEAM

MEETING NOTES

August 17, 2000

CORPS OF ENGINEERS NORTHWESTERN DIVISION OFFICES – CUSTOM HOUSE

PORLAND, OREGON

DRAFT

I. Greeting and Introductions

The August 17 Technical Management Team meeting, held at the Custom House in Portland, Oregon, was chaired by Cindy Henriksen of COE and facilitated by Jacqueline Abel. 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.

Abel welcomed everyone to the meeting, then led a round of introductions and a review of the agenda.

II. Review of Minutes from August 10 TMT Meeting.

Abel asked that any changes to the minutes from the last TMT meeting be submitted to Henriksen by close of business Friday, August 18.

III. McNary Temperature Test Update.

Abel noted that WDFW's report on the 2000 McNary temperature test is now available. Paul Hoffarth of WDFW said the last two "units off" test days were completed last week; both days were windy, and temperatures, as a result, were flat throughout the facility. This does confirm, however, that wind is a significant factor in the water temperature equation? Scott Bettin asked. Definitely, Hoffarth replied, adding that the Corps of Engineers has produced a report that documents the effects of wind and weather on operations at McNary.

Hoffarth said he is working with Dave Hurson and other members of the McNary work group to develop some operational recommendations for McNary in the wake of this year's temperature test; he said he will share these recommendations with the TMT as soon as they are available, probably in time for discussion at one of the next two TMT meetings.

Hoffarth added that current water temperatures at McNary are on the decline; mortality is holding steady at fairly low levels. In response to a question from Paul Wagner, Hoffarth said there is still the potential for water temperatures at the facility to spike again in late August and/or early September.

Would you expect that your recommendations might be incorporated into next year's fish passage plan? Henriksen asked. Yes, Hoffarth replied – our hope is to develop a set of operating guidelines, covering various points in the season, that could be incorporated into the fish passage plan. Scott Boyd added that Dave Hurson's recommendation, at least for now, is that McNary Unit 1 continue to operate, given the low mortality currently being seen at McNary.

Henriksen noted that the TMT will revisit this issue at next week's meeting, although the operating recommendations may not be available until the following week.

IV. Updated Emergency Protocols.

Henriksen said she had incorporated the additional language developed during last week's TMT meeting into a new draft of the emergency operations protocols; this document is now available via the TMT website. She said she wanted to focus primarily on the new language in the protocols at today's meeting. The group spent a few minutes reviewing this document, offering a variety of comments, clarifications and suggested changes. Henriksen said she will incorporate these changes into a new draft of this document, and will distribute the revised draft to the TMT membership via email.

V. Comments on TMT Emergency Operations Protocols.

This topic was covered during the previous agenda item.

VI. Email List for Emergency Notification.

Bettin said he had yet to hear from some key TMT participants, including Idaho, Montana and WDFW, about who should represent them on the email list for emergency notification. Ed Bowles, Jim Litchfield and Jim Nielsen said they will provide the necessary information to Bettin in the next few days. Bettin said that, once this information is received, he will distribute the list to the TMT membership via email.

VII. Current System Conditions.

Fodrea said Grand Coulee is at elevation 1282.6 feet this morning; At Banks Lake, Reclamation hopes to have two additional pumps up and running by later today or, possibly, tomorrow. Once four pumps are back on line, Fodrea said, we should be able to recover Banks Lake elevation at a rate of about three inches per day. Reclamation anticipates that Banks Lake will be at or near elevation 1564, about a foot below the bottom of the project's operating range, by the time the pumps are back up.

We would like to achieve elevation 1565 as soon as possible, hopefully within about four days, Fodrea said. Reclamation would like to put that forward as an operational proposal, she said – refill Banks Lake to elevation 1565, then hold that elevation until conditions allow us to increase Banks Lake elevation further. Nielsen said that proposal would be acceptable to Washington. The question is when we might start filling again, Fodrea said. I think November might be the soonest you could begin refill, Nielsen said. We'll keep considering this internally at Reclamation, Fodrea said, and revisit this issue with the TMT as soon as we have something concrete to propose. She added that two additional pumps should be available soon at Grand Coulee, perhaps as early as this weekend.

Fodrea said the current Hungry Horse elevation is 3544; we're rapidly approaching the 3540-foot draft limit, and plan to be there by August 31. She said Reclamation intends to begin ramping down Hungry Horse outflow by some time next week; the agency is still working through some rampdown issues with the State of Montana. Litchfield said Montana would like to do some wetted perimeter studies below the dam this year, in order to gain some additional information about the effects of low flows in the South Fork; this may have an impact on the timing and magnitude of the rampdown operation. We're still working out the details, and will coordinate them with Reclamation, NMFS and the Fish and Wildlife Service by early next week, Litchfield said.

The Boise, Snake and Payette flow augmentation water is continuing to come out, Fodrea said; we've just received a revised accounting from the Idaho watermaster that has raised some red flags within our agency. Fodrea said Reclamation will have some additional discussions with Idaho on this topic, and will report back to TMT as more information becomes available.

Moving on, Henriksen said Libby continues to release 8 Kcfs; current elevation at the project is 2436, 23 feet from full. Dworshak is currently releasing just over 13 Kcfs of 48-degree F water; the project is drafting 1.5-2 feet per day, and is currently at elevation 1540.5 feet. Henriksen added that Brownlee is at elevation 2044, with Hells Canyon outflows of just under 10 Kcfs.

All of this outflow information translates into a week-average flow of 27 Kcfs at Lower Granite, said Henriksen; at McNary, for the week ending August 13, we saw week-average flows of 162 Kcfs. For the week ending August 20, the Corps expects to see average flows of about 28 Kcfs at Lower Granite and the TMT spreadsheet is showing 160 Kcfs at McNary.

Bettin noted that the Little Goose powerhouse is off-line today for a line change; the project is spilling 20 Kcfs. Scott Boyd said the salmon managers had requested spill, rather than speed-no-load, and the decision was made, accordingly, to spill 20 Kcfs and run the rest through speed-no-load, rather than ponding. The line change operation will take place from 6 a.m. to 5 p.m. today; the project will be back to normal operation tomorrow.

Dick Cassidy touched on Dworshak gas levels over the past week, noting that there has been little change in gas levels, except for some minor variation due to air temperatures. We've been maintaining 109% TDG at Peck, he said. Paul Wagner noted that Dworshak discharge increased by about 1 Kcfs last week; what allowed that increase to occur? he asked. Lower air temperatures, Cassidy replied.

The only other place I wanted to look at TDG in the system was the Camas/Washougal gauge, said Cassidy; there again, you can see some changes in the 12-hour highs. Basically, the fluctuation is caused when we go from a period of 75 Kcfs daytime spill to 24-hour spill. We were generally a little below the 115% TDG cap last week, he said; we've been trying to make adjustments accordingly, depending on whether we're in the test period or weekend spill.

Moving on to fish migration data, Wagner reported that current passage tables continue to show significant numbers of fall chinook subyearlings passing Lower Granite – about 2,500 per day. Wild fish are showing up at Lower Granite in lower numbers – the low single digits, in general. The in-season forecast indicates that we're at the 96% passage point for the 1,200 fish that were marked, he added; cumulative passage at Lower Granite is bumping along at the lower confidence interval for what was predicted this year. In response to a question from Bettin, Wagner agreed that passage numbers are at a record high this year, although that is due primarily to the higher number of Snake River fish released this year.

At McNary, Wagner continued, last week's daily indices have continued in the 40,000 range; numbers have started to decline slightly in recent days. Cumulative passage at McNary is near 10 million for the year. With respect to adult passage, Marv Yoshinaka said steelhead counts at Bonneville were in the 2,000 fish-per-day range over the past few days; fall chinook have been passing the project at a rate of about 1,000 fish per day. Both numbers are a little high for this point in the season, he said, adding that it looks as though many of the steelhead are holding in the Bonneville pool – counts are significantly lower at The Dalles.

Wagner noted that a few fall chinook have now begun to enter the Snake River. Bettin added that about 200 Snake River sockeye have returned to the Sawtooth and Redfish Lake Creek traps so far in 2000, an excellent return given the fact that a total of 290 adult sockeye were counted at Lower Granite Dam this year.

VIII. New System Operational Requests.

No new SORs were submitted this week.

IX. Recommended Operations.

Bettin said the current TMT spreadsheet provides a pretty good ballpark approximation of the upcoming operations systemwide. Fodrea reiterated that Hungry Horse rampdown will likely begin late next week; it was agreed that Fodrea will distribute an email outlining the planned rampdown operation to the TMT prior to next week's meeting, as soon as this information is available.

X. Other.

A. September Operations at Montana Reservoirs. Henriksen said Libby will continue to release 8 Kcfs until the Corps hears otherwise. Litchfield said Montana is continuing to discuss rampdown operations at Libby, although Montana will not object if the 8 Kcfs outflow from that project continues into September. Henriksen said she will place Libby operations on the TMT agenda as soon as a change to the current operation is forthcoming.

XI. Next TMT Meeting Date.

The next meeting of the Technical Management Team was set for Thursday, August 24, at the Corps' Northwestern Division headquarters. It was agreed that this meeting will be a face-to-face meeting. Meeting notes prepared by Jeff Kuechle, BPA contractor.

TMT ATTENDANCE LIST

AUGUST 17, 2000

Jacqueline Abel	Facilitator	
Ruth Abney	COE	
Scott Bettin	BPA	
Scott Boyd	COE	503/808-3943
Dick Cassidy	COE	
Kim Fodrea	Reclamation	
Cindy Henriksen	COE	503/808-3945
Jim Litchfield	Consultant (Montana)	

Christine Mallette	ODFW	
Kevin Nordt	PGE	
Mike O'Bryant	Columbia Basin Bulletin	
Paul Wagner	NMFS	
Marv Yoshinaka	USFWS	
Nancy Yun	COE	

On Phone:

Name	Affiliation	Phone
Ed Bowles	IDFG	
Margaret Filardo	FPC	
Richelle Harding	D. Rohr & Associates	
Tim Heizenrater	Enron	
Steve Hemstrom	AVISTA Utilities	
Paul Hoffarth	WDFW	
Phillip Irvin	Seattle City Light	
Dusica Jevremovich	FPC	
Nengjin Liu	Idaho Power	
Kyle Martin	CRITFC	
Jim Nielsen	WDFW	

Emergency TMT Call

August 21, 2000 2:00 p.m.

An emergency TMT call was initiated by the Corps of Engineers at the request of Bonneville Power Administration at 1400 hours, 21 August 2000 because of a 2000 MW deficit for the last half of August.

Participating on the call was Cindy Henriksen of the Corps of Engineers (COE), Greg Delwiche and Scott Bettin of the Bonneville Power Administration (BPA), Jim Nielson of Washington Department of Fish and Wildlife (WDFW), Kim Fodrea of the Bureau of Reclamation (BOR), Paul Wagner and Chris Ross of the National Marine Fisheries Service (NMFS), Marv Yoshinaka of the U.S. Fish and Wildlife Service (USFWS), Jim Litchfield representing Montana, Christine Mallette of the Oregon Fish and Wildlife Department, Ed Bowles of the Idaho Department of Fish and Game. Also participating was Michelle DeHart of the Fish Passage Center, Kyle Martin of the Columbia Region Intertribal Fish Commission (CRITFC), Brian Marotz of Montana Fish Wildlife and Parks. Others from the COE included Gayle Lear, Clare Perry, Vern Parry, Scott Boyd, Ruth Abney, and Dick Cassidy.

Greg Delwiche described the emergency as a situation lasting for at least the next 10 days as an energy problem, not a capacity problem. It is caused by the lack of water resources and fuel resources. Currently, natural flows are 80 % of normal and there has been a significant reduction in natural flows in Canada. Very hot conditions in Canada have depleted the remaining snowpack. Shaping peaks is not the issue. It is a Northwest energy problem, not a just a California energy problem. Consequently, the problem will affect BPA's ability to meet firm load. There is a need for 30 KCFS (1500 MW) in the Columbia system to meet load requirements.

BPA cannot rely on the market as a resource because California is in a deficit. BPA is buying power in some instances from California. Delwiche didn't know the situation with the private utilities. The net position for sales to California through September is that there will be a low level import from California.

WNP2 has a leaking seal and is running at only 60% of capacity, consequently this causes a 500MW deficit. It will be running at 60% of capacity through August. The leak will not be repaired until some time in September, said Delwiche.

There is 1 and 1/2 feet of augmentation water left at Grand Coulee; Arrow is at 1438.9 feet; BPA is getting as much water out of Canada as they can. BPA will be trying to get an autumn provisional draft agreement, but there is a possibility the Canadians will not agree to one. Henriksen asked how many megawatts are we short. Delwiche responded that it was 2000 MW; 500 MW is because of WNP2.

Delwiche suggested proposed remedies, saying that this type of situation during August may occur over the next few years. BPA does not feel that they cannot fully buy their way out. The proposed remedies suggested by BPA are:

- purchases provide partial remedy;
- reservoir draft;
- voluntary conservation, such as DSI available is over 50 to 100MW and a press release coordinated through the state governors' offices;

Delwiche proposed five reservoir actions in August:

- Grand Coulee: draft to 1278;
- Albeni Falls: draft to 2061;
- Dworshak: full load, no spill through August, drafting an additional 2 feet (drafting to 1518 feet);
- Hungry Horse: no action, the water is too far to get to the Columbia to be useful for shaping. Shaping would have to be coordinated with Montana;
- Libby: no increase in flow;

Delwiche proposed three spill actions:

- John Day: end the last 3 days of testing and go to 0 spill;
- TDA: drop from 40% to 30% spill around the clock;
- Bonneville: 24 hour spill at 50 KCFS.

Addressing the other alternatives, Delwiche indicated that:

- voluntary conservation: they can get 100MW curtailment from industry, but there is no interruptible DSI load available.
- Banks Lake is at elevation 1565 due to a higher fill rate over the weekend;
- Kim Fodrea suggested get more spill reduction rather than looking at drafting Grand Coulee to 1278 feet. She was concerned about refilling to 1283 by the end of September. Michelle DeHart indicated that the BiOp has specified spill levels and that spill should not take the bulk of the hit.
- Kim Fodrea suggesting operating outside the 1 % efficiency range. DeHart indicated that such an action increases fish mortality.
- without the proposed spill reductions and additional drafts from other projects, Grand Coulee would have to draft to elevation 1274 to meet the firm loads.

BPA stressed that the proposed actions needed to be started soon. Wagner, Yoshinaka, and Nielsen all supported the BPA proposal because the burden was shared by all parties.

Cindy Henriksen indicated that the responsibility went beyond the scope of the TMT and that the Corps needed further internal discussion before agreeing to this proposal. The TMT then discussed the consequences of not implementing the proposal. Rolling blackouts are possible by Wednesday, said Delwiche, with the conclusion that rolling blackouts would be considered before cutting DSI. Delwiche also said there were no curtailable loads in the Northwest. Fodrea added that Reclamation wants an assurance of provisional draft from Canadian projects prior to drafting Coulee below 1280 feet,

Henriksen also said that at this time she can not agree to draft Albeni Falls below 2062 feet in August. A Dworshak operation of full powerhouse (no spill) through August, drafting to 1518 was possible but she wanted to check with the project for health and safety issues. Kyle Martin suggested that the Corps also discuss with the Nez Perce Tribe. The General would have to approve the Bonneville and The Dalles operations since they were being requested for a ten day duration, rather than only six hours.

Ed Bowles of Idaho said that he did not like any of the options. The region seems to be willing to run the system for a power emergency but not so for a fish emergency. He felt that as long as the burden was balanced, the proposed operation was acceptable, but not to look for fish manager support.

Delwiche asked that the COE discuss the situation with their management and that the group reconvene at 1630 hours. The COE and BOR also decided to hold an off-line caucus.

Henriksen wanted to know whether NMFS and USFWS agreed with the proposed solution to the emergency. Paul Wagner of NMFS and Marv Yoshinaka both indicated that they were satisfied that the actions provided closure and that the burden was equitable.

Delwiche indicated that the impetus for immediate action was to minimize the impact to Grand Coulee.

Since the TMT was unable to reach consensus, it was agreed to reconvene at 4:30 on August 21.

Reconvened Emergency TMT Call 21 August 2000 4:30

The Emergency TMT call concerning a late August Northwest energy emergency reconvened at 1630 hours on 21 August 2000.

Participating were: Cindy Henriksen (COE), Greg Delwiche and Scott Bettin of BPA, Kim Fodrea (BOR), Paul Wagner and Chris Ross (NMFS), Marv Yoshinaka (USFWS), Jim Nielsen (WDFW), Jim Litchfield (Montana), Kyle Martin and Bob Heinith (CRITFC), Richelle Harding (Rohr and Associates representing mid-Columbia PUDs). Also in attendance were: Gayle Lear, Scott Boyd and Dick Cassidy of the COE.

Cindy Henriksen spoke with General Carl Strock and agreed to some reservoir draft and three spill changes. The COE could agree to reservoir draft at Albeni Fall to elevation 2062, but further discussion would be needed to draft below that elevation. Dworshak could be changed to a no spill condition, but the COE would have concern about drafting below elevation 1520 feet. Implementation of The Dalles and Bonneville spill changes was acceptable.

Kim Fodrea could not agree to any operation for Grand Coulee. She felt that she could reach an agreement if Albeni Falls were drafted to 2061 feet and Dworshak was drafted to 1518, and there were additional spill reductions.

Jim Nielsen felt that the equitable plan was becoming inequitable. He saw an effort to reduce spill and to reduce draft of reservoirs. Chris Ross felt that the 95 and 98 BiOp covered this type of emergency.

Delwiche felt that with the present commitment from the COE, only 25% of the deficit was covered with this type of decision. He felt that reservoir drafts were needed to cover the rest of the deficit.

Bob Heinith asked if BPA had considered mitigation for this action. Delwiche indicated that they were dealing with the emergency at hand and had not yet discussed mitigation measures.

At the conclusion of the call, BPA indicated it would continue to work with the COE concerning Albeni Falls issues and Grand Coulee will continue on its present operation until Wednesday, 23 August 2000. BPA was 1500 MW short; they will purchase one third and the rest will come from hydropower. The Corps agreed to reduce spill at The Dalles and Bonneville and to stop spill at Dworshak as soon as possible.

**TECHNICAL MANAGEMENT TEAM
MEETING NOTES
August 24, 2000
CORPS OF ENGINEERS NORTHWESTERN DIVISION OFFICES – CUSTOM HOUSE
PORTLAND, OREGON**

DRAFT

FACILITATOR'S NOTES

Facilitator: Jacqueline Abel

The following is a list of items that the Technical Management Team (TMT) discussed at its meeting on August 24, and that will require future action or discussion, some of them before the next TMT meeting. For a more complete discussion of agenda items, see the meeting minutes when they are posted on the TMT homepage.

1. MINUTES. Any corrections or additions to the minutes of the August 17 TMT meeting should be sent to Cindy by 5 PM on August 25. The notes for the August 21 Emergency TMT conference call were posted on the TMT homepage the morning of the 24, so the will be reviewed at next week's TMT meeting.

2. McNARY TEMPERATURE TEST. There was nothing further to report this week, and Scott Boyd indicated that any recommendation that might come out of the test would go to FPOM, and be considered for the next Fish Passage Plan.

3. PRIORITIZATION LIST of FCRPS Operations Which May Be Used During a NW or SW System Reliability Event, Revised as of 8/10/00. TMT had an extensive discussion about the use of the priority list(s) during recent emergency situations, and how such prioritizations could help them make decisions in the future. There appeared to be agreement that having such a list was useful, and that it should be used as a starting point, then be prioritized for each emergency rather than implemented in the same order each time. It would be useful to have documentation (after the emergency) about what steps were actually implemented and in what order.

Cindy agreed to make a new version of the "list" which would include these changes:

(a) Insert in the title after the word operations: "arranged in an order to reduce biological impact" and put the date of 8/24/00 on this version (b) add a new sentence after the title to explain that this list should be viewed as a starting point, then be prioritized for each emergency rather than implemented in the same order each time (c) #8 delete "draft at 1.5 ft/day" and insert "draft Coulee to 1280" (d) #25 delete "increase to 2 ft/day draft" (e) delete the entire second footnote about the fire at GCL because it is out of date. Scott agreed to add information about what steps were implemented and in what order to the email he is sending out to TMT after an emergency is over.

4. TMT PROTOCOL FOR DECLARING EMERGENCY OPERATIONS. Cindy distributed a new version of the protocols, but needs additional time to add some more detailed language to Section E (2) to replace the proposed language that says "Additional emergency actions will be taken as necessary". It was decided to put this on next week's agenda after Cindy sends out another version to TMT members via email in advance of the meeting.

5. NMFS FISH MITIGATION MEASURES. NMFS reported that they had reviewed the emergency operations through August 10 and that no offsetting measures are warranted for that period. They have not reviewed the more recent emergency actions, and this item will be on the August 31 agenda.

6. LIBBY OPERATIONS IN SEPTEMBER. After some discussion of this item, BPA and the COE agreed that their baseline for planning through the end of September would be to at 8,000 KCFS. They will come back to TMT if there are changes.

7. RECOMMENDED OPERATIONS. SOR #2000-30 was discussed and the COE and others said they needed more time and information to assess this request, since it was received just before the meeting. A smaller group of representatives of NMFS, the COE, Idaho (Steve Pettit), USF&W, CRITFC (Kyle Martin) and the Nez Perce (Dave Statler) will exchange information and meet on Monday to see if they can reach agreement regarding the study proposed in this SOR.

Cindy will set up a conference call on Monday afternoon and notify those involved. Paul agreed to send the information supporting the SOR, including modeling and the "Evaluation of Adult Salmon, Steelhead, and Lamprey Migrations Past Dams and through Reservoirs in the Columbia River and Tributaries, Adult Salmon and Steelhead Study Plan 2000" cited in the SOR, by Friday at the latest. Cindy will send out the modeling that the COE has done with different assumptions also by Friday. Cindy and Paul agreed to talk further about what degree of coordination the COE would like to make sure has happened with the Nez Perce and Idaho.

TMT empowered this small group to resolve this issue if possible, on Monday. If it isn't resolved, the COE said that their default operation would be to operate Dworshak to 1520 by August 31 and then operate on minimum flow in September. It was agreed that NMFS or USF&W could raise this to the IT, if they choose to after Monday's meeting, without convening another TMT meeting or call.

Jim Litchfield will continue to coordinate with Kim about Montana's tests.

8. STOPPING SPILL FOR END OF SEASON. BPA asked whether spill could stop at Ice Harbor. Co-managers asked that BPA continue spill until FPAC has a chance to discuss this next Tuesday, and it will be put on the next TMT agenda.

9. TRIBAL FISHING SEASON. Kyle Martin will send an email to TMT member about the dates for the tribal fishing season, regarding CRITFC's SOR #2000 C-4.

10. NEXT MEETING. TMT agreed to meet at the COE office next week for an "in person meeting". The conference call-in line will be available for those who cannot attend in person.

AGENDA items (in addition to the regular items involving system operations) for August 31 noted at this meeting included:

- * NMFS Fish Mitigation Measures for period since August 10
- * Revised version of language changes to the Protocols for Emergency Operations
- * Stopping spill at Ice Harbor
- * Ending MOP operation at Ice Harbor, Lower Monumental and Little Goose

REMINDER: TMT is planning a field trip on September 7, 2000, to Hardy Creek and Pierce Island. A meeting room has been reserved at Bonneville Dam and field personnel will be ready to conduct a tour.

I. Greeting and Introductions

The August 24 Technical Management Team meeting, held at the Custom House in Portland, Oregon, was chaired by Cindy Henriksen of COE and facilitated by Jacqueline Abel. 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.

Abel welcomed everyone to the meeting, then led a round of introductions and a review of the agenda.

II. Review of Minutes from August 17 TMT Meeting and August 21 Conference Call.

Abel asked that any changes to the minutes from the last TMT meeting or conference call be submitted to Henriksen by close of business Friday, August 25.

III. McNary Temperature Test Update.

Scott Boyd said there is little new on this topic this week; Dave Hurson and Paul Hoffarth are still planning to develop a series of draft protocols for McNary operations during the late-summer period for inclusion in next year's Fish Passage Plan. Until that proposal is developed, however, there isn't much to discuss, said Boyd; Hurson is very busy reviewing the draft Biological Opinion at the moment. Unless we start to see very high mortality at McNary, there probably isn't much we need to do with this right away, he said.

IV. Emergency Protocols.

The group briefly discussed the emergency actions list, which has gone through a series of iterations at previous TMT meetings and conference calls; Kim Fodrea asked that Item 8 (the 1.5-foot-per-day draft at Grand Coulee) be amended to incorporate a draft limit of 1280 feet at that project. She also asked that Item 25 (increase Grand Coulee draft to two feet per day) be amended to include a draft limit of 1278 feet. Somewhere in between those two items, said Fodrea, I would also suggest that we insert a draft to elevation 1279 -- perhaps Item 16 or 17. Mainly, she said, I just wanted everyone to understand that there is some flexibility to draft Grand Coulee below elevation 1280 under certain emergency circumstances.

Scott Bettin noted that there has been some confusion about the fact that the emergency actions list has not been followed in order during the recent emergencies; that's because each emergency is different, and while this is a rough list of biological priorities, intended to provide guidance, all of these items won't necessarily be used, in order, for each emergency -- we have to take actions that fit the situation, he said. It may be simpler just to delete the word "prioritized," and possibly add an explanatory paragraph to this document, articulating how the list will be used, Bettin suggested. As long as the action agencies can provide a written explanation of what steps were taken, and why, after the fact, that would probably be acceptable, said Marv Yoshinaka. We can provide that, Bettin relied.

After a few minutes of discussion, it was agreed that the TMT will refine this list further during the post-season review and pre-season planning periods. It was agreed to delete the word "prioritized" and insert the sentence "...arranged in biological order, with the intent of reducing biological impacts," as well as a sentence articulating the fact that this list is intended as a starting-point for developing actions in response to power system emergencies, and that the action agencies, with TMT's input, will draw actions from the list in whatever order is most appropriate for a particular emergency. Henriksen agreed to make these changes, and distribute the revised list of emergency actions to the TMT via email. She added that she will make the first two changes requested by Fodrea (after a few minutes of discussion, it was agreed not to make the third change, draft Grand Coulee to elevation 1279, at this time). It was also agreed that, at the conclusion of an emergency, BPA will produce a memo (to be distributed to the TMT membership via email) explaining what actions were implemented and why.

With respect to the emergency notification list, Bettin said he has received no further additions to the list. If anyone else needs to be on the list, said Abel, please email that information to Scott Bettin.

Henriksen noted that she had revised the most recent emergency actions list to incorporate comments made at last week's TMT meeting. Fodrea said the comment at the bottom of the list regarding the fire at Grand Coulee can now be deleted.

V. Discussion of NMFS Fish Mitigation Measures.

At last week's TMT meeting, we talked about the possibility of requesting mitigation for the actions that have taken place for the emergencies through August 10, said Wagner; the feeling at NMFS is that, for the emergencies that occurred through August 10, no offsetting measures are warranted. We have not yet reviewed the current emergency, Wagner said, but we will be taking a look at any mitigation measures we feel may be necessary. Wagner said he will report back to TMT once that review is complete and NMFS has reached a decision.

VI. Power System Emergency Update.

Bettin said the most recent power system emergency mercifully started and ended briefly. On Monday, he said, it looked as though BPA would not be able to purchase enough power to meet the requested load from California. However, said Bettin, by Tuesday, people were knocking on our doors wanting to sell us power. We'll hope that the cooler temperatures in California continue, he said, because a one-degree difference in California can make a 1,500 MW difference in load. We were able to restore normal fish operations in the FCRPS by 10 a.m. Tuesday, he added.

During this particular event, conditions were very different than in previous emergencies, Bettin added. Our response to the previous emergencies was limited primarily by Intertie capacity, he said; again, this time, we didn't think we had enough access to energy, but it turned out we were able to purchase enough power through the end of the month to avoid drafting Grand Coulee below elevation 1280, or increasing the draft at other projects. It was basically an example of the fact that BPA will buy its way out of an emergency if it possibly can, Bettin said. Henriksen noted that the minutes from Monday's emergency conference call are available via the TMT website.

VII. Libby September Operations.

Henriksen said the Corps is in the process of evaluating how best to get from the end-of-August elevation at Libby to elevation 2411 by the end of December, and has modeled various flow scenarios designed to get us there. We didn't find a lot of flexibility, she said; basically, it looks like we'll need to release 10 Kcfs-11 Kcfs during December in order to achieve that elevation, and there doesn't appear to be a lot of flexibility to make Libby outflow higher or lower, given current low-flow conditions and the fact that we don't know when the rains will begin this fall.

Jim Litchfield said he has been discussing this operation with his clients in Montana; essentially, they favor a very gradual rampdown, starting with a reduction from 8 Kcfs to 7 Kcfs outflow. If we can hold 8 Kcfs through September, that would be preferable, he said. Bettin noted that it will be necessary to release minimum outflow from Libby for an extended period beginning January 1 in order to meet the April 10 refill target at that project if the January water supply forecast is below average. After a brief discussion, it was agreed to hold 8 Kcfs outflow for the present time, and to discuss this operation further once a change is necessary.

VIII. Current System Conditions.

Fodrea said the current Grand Coulee elevation is 1281.5; there are now four pumps back on line at Banks Lake. Over the weekend, she said, we were able to increase Banks Lake elevation to 1565.5, and have since reduced pumping somewhat. Unit 1 in the left powerhouse is now back on-line, which allowed us to restart two pumps at a time, she said; it is somewhat problematic to start and stop those pumps. With four pumps online, we are now able to keep up with irrigation demand, Fodrea added.

At Hungry Horse, Fodrea continued, current elevation is 3542; the project is releasing 5 Kcfs. The plan is to reduce discharge further next week; Hungry Horse will be at minimum outflow (3.5 Kcfs) by August 31. Montana is collecting wetted perimeter data below the project as discharge recedes, Fodrea added. If we need more data points, it may be necessary to vary the Columbia Falls minimum flow for a couple of hours, said Litchfield – we'll talk further if that appears to be necessary.

On the Payette, we're still on track to deliver the full flow augmentation volume, said Fodrea, adding that the problem with the accounting on the Boise system, referenced at last week's TMT meeting, has now been resolved. On the Upper Snake, normally, as we approach the end of the flow augmentation period, we include a gradual rampdown for snails, she added; this year, Idaho Power would like to drop flows abruptly to minimum (200-300 cfs) as soon as the flow augmentation volume is out. We settled that dispute, but we're going to have to retain a small portion of the Upper Snake flow augmentation volume in order to accomplish a more gradual rampdown, she said, adding that this

rampdown operation shouldn't have much of an impact on Snake River flows. If you have a problem with this operation, she said, I would suggest that you contact Idaho Power directly.

Henriksen said current Hells Canyon discharge continues to be about 8.9 Kcfs; Brownlee is approaching elevation 2045. At Dworshak, as a result of the conference call on Monday, we stopped spill, and are releasing 10.5 Kcfs through the powerhouse. Current elevation at the project is 1528. The current plan is to reduce flow over the weekend to 8 Kcfs, then down to 4.8 Kcfs on Tuesday, which will take us to 1520 on August 31, Henriksen said.

Last week's average flow at Lower Granite was 27 Kcfs, Henriksen said; average flow at McNary was 148 Kcfs, and in general, flows are continuing to recede.

The spreadsheet shows an average flow of 121 Kcfs at McNary for the week ending August 27, said Chris Ross – is that still accurate? It's probably pretty close, Bettin replied.

Dick Cassidy said there is little to report on the TDG front this week; we stopped spill at Dworshak, as Cindy mentioned, and we spilled to the cap at Bonneville. We were below 115% at Camas/Washougal last week. On the water temperature front, Cassidy said average release temperatures at Dworshak continued to be a fairly constant 48 degrees. He noted that even five miles downstream from Dworshak, air temperatures are starting to have an effect on water temperature. At Lower Granite forebay, for a good part of last week, there was a cooling trend, but temperatures have started to creep up again over the last few days, Cassidy added.

On the fish migration front, Wagner reported that subyearling chinook indices are declining at Lower Granite (to 1,500-2,000 fish per day) as we near the end of the season. At McNary, we went from an index of about 40,000 fish per day to fewer than 20,000 last week. In general, he said, the migration is continuing, but is falling with flows and chronology within the season.

At Lower Granite, the most recent cumulative index shows that we're approaching the lower confidence interval, Wagner said; at McNary, the cumulative index continues to rise. He said Snake River wild fall chinook indices were very low last week at both McNary and Lower Granite – at Lower Granite, the last wild fall chinook was reported on August 13, and we've been seeing daily indices of 1-2 at McNary over the past week or so. It sounds as though it may be time to consider stopping spill at Little Goose, said Bettin – the run has been flat-lined for the past week or so.

On the adult front, with respect to fall chinook at Bonneville, we're seeing very large numbers for this point in the run – about 5,000 fish per day, Wagner continued. They're also counting about 4,000 steelhead per day at that project, he said – again, large numbers for this time of year. A few fall chinook are starting to show up at Ice Harbor, he said – 269 so far, to date. A few steelhead are showing up in the Snake as well – 32 to date. In general, he said, the adult run is beginning. A total of 214 Snake River sockeye adults have returned to Redfish Lake this year, Bettin added.

IX. New System Operational Requests.

Early this morning, the Corps received SOR 2000-30. This SOR, supported by ODFW, USFWS, WDFW and NMFS, requests the following specific operations:

- Draft Dworshak reservoir to elevation 1500 by September 17 to evaluate the effects of cool water releases from this reservoir on Lower Snake River temperatures and the response of migrating adult salmon and steelhead to the cooler water river condition.

Yoshinaka went briefly through the background and justification for this new SOR; please refer to the full text of SOR 2000-30 (available via the TMT and FPC websites) for further details. He noted that, according to a recent BPA analysis, this operation would result in a refill probability (by June 30) of 98% at Dworshak next year. It would also likely decrease spring flows next year by an average of 1.7 Kcfs. Yoshinaka added that Ted Bjornn is available to conduct the monitoring needed for this evaluation.

Kyle Martin said he assumes the BPA analysis was done using the HydroSim model, which is not intended for use as a forecast model – it is based on the 50-year historic water record, not on starting conditions and on forecast information. Actually, it does take into account starting conditions, Bettin replied. One concern the tribes have is that, looking at the 30-90-day forecast, we're looking at dryer than average conditions during the fall, and HydroSim does not take that information into account, Martin said – that will have an effect on both river flows and on refill at Dworshak.

The group spent a few minutes debating the suitability of the HydroSim model for this type of forecasting. Henriksen said the Corps had looked at the BPA model runs; her suggestion is that BPA needs to use 1.5 Kcfs as the minimum flow for Dworshak from October-April, rather than the 1.3 Kcfs shown in the current model runs, which could have a significant impact on the probability of refill at that project.

A detailed discussion of the impacts of this SOR on Dworshak refill and spring operations ensued. Litchfield observed that the TMT continually calls for flow augmentation from Dworshak during the spring period, and often cuts refill very close. If we start out 20 feet lower, he said, that's going to make Dworshak refill that much more problematic. Dave Statler said he has a very hard time accepting the idea that, if Dworshak starts out 50 feet below the upper flood control rule curve, that isn't going to impact the probability of Dworshak refill, or flows during the spring.

There is no question that this operation will affect spring flows, said Wagner – it is an attempt to gain some additional information that will help us avoid our annual debate over the effects of holding an addition volume in Dworshak for use in September. Martin noted that CRITFC had put forward a plan that would have accomplished the same thing at the TMT meeting in Lapwai, but that NMFS had vigorously opposed that plan.

So where do we go from here? Litchfield asked. The question is, will the information gained by drafting Dworshak to elevation 1500 be definitive enough to offset the risk to refill and spring flows?

The discussion then turned to release temperatures at Dworshak; Henriksen said the cool water in that reservoir is nearly exhausted, and a gradual warming trend in Dworshak outflow temperatures will yield a release temperature of about 55 degrees by mid-September. Has NMFS talked about impacts to cultural resources? Rick Eichstadt asked. How will consultation work in this process? Wagner replied that he will need to discuss that issue with others in his agency.

After a few minutes of further debate, Henriksen observed that implementation of this SOR is some distance in the future; it isn't necessary to reach resolution on it today. The big issue is NMFS' consultation with the Nez Perce Tribe and Idaho, she said; in the interim, the Corps' intended operation will be to ramp down to minimum outflow at Dworshak starting September 1.

Ed Bowles said that, while Idaho's preference would be to retain a volume of water in Dworshak above elevation 1520 feet for release in September, Idaho will not object to this additional 20-foot draft, with the caveat that this operation not jeopardize the probability of Dworshak meeting its April 10 flood control refill elevation. I'm not at that comfort level yet, he said – that's why Idaho did not support this SOR at this time.

Martin reiterated that the 30-90-day forecast is predicting dryer-than-average conditions in the Columbia and Snake River Basins. We need to keep that in mind, as we evaluate the potential impacts of this proposed operation on refill probability, said Martin. We also need to bear in mind that, while the probability of refill by June 30 may look good in the model studies, if we start the spring season 20 feet down from where we would normally be, that is going to result in proportionately lower Snake River flows until Dworshak refills in June, said Henriksen.

Statler said that, at minimum, more time is needed to examine the study design and to evaluate the risks to refill, spring flows and cultural resources. We need to look closely at the assumptions used in the model study; he said; if that can be done, we may be in a position to propose such a study next year, but I don't think it's very likely for this year.

What aspect of this proposal is different from what the tribes were proposing, in terms of September operations, aside from the additional 20-foot draft? Jim Nielsen asked. We need more time to look specifically at the study design, and what the study is expected to produce, in terms of the data it yields, Statler replied. Our proposal was to retain a volume above elevation 1520 for use in early September, to keep water temperatures cool until ambient cooling kicks

in he said – I don't recall what evaluation process we were proposing. Actually, our proposal wasn't a study, said Rick Eichstadt of the Nez Perce Tribe – it was our shot at the best operation for fish. Yoshinaka observed that the proposal in this SOR has gone through the SRWG process.

Ultimately, Wagner said both the study proposal and the refill probability model assumptions, methodology, and results are available. It was agreed that he will distribute this information in support of this SOR by later today; Henriksen said she will attempt to include the results of the Corps' modeling runs in this package as well. This information will take the form of a fax. Does the tribe have any information on the impacts to cultural resources that have occurred when Dworshak has been drafted to elevation 1500 in previous years? Nielsen asked. I'll have to check, Eichstadt replied.

Perhaps we can agree to exchange the available information in support of this SOR, plus whatever information may be available from the tribes on potential cultural impacts, and agree to discuss this SOR at next week's TMT meeting, Abel suggested. We will need to begin the operation on September 1, the day after next week's meeting, Yoshinaka replied. The group briefly discussed the consultation process; it was agreed that NMFS, the Corps, the Nez Perce Tribe and Idaho will need to discuss the appropriate level and form of consultation for this issue outside of today's meeting. Martin said CRITFC would like to be included in that meeting; a sentiment echoed by Yoshinaka for the Fish and Wildlife Service and Fodrea for Reclamation. After a few minutes of additional debate, it was agreed to schedule a TMT conference call, involving these participants, for Monday afternoon, August 28 (exact time t.b.a.).

What if this small group can't reach consensus, Bettin asked – would NMFS want to raise this issue to IT? We'll need to see what happens on Monday, Wagner replied. He asked whether the Corps has a position on this SOR; Henriksen replied that the requested operation goes beyond the operation called for in the Biological Opinion. This SOR was received only 45 minutes prior to today's meeting, she said; the default operation is to go to elevation 1520 on August 31, and release minimum outflow from Dworshak after that.

Wagner noted that this evaluation is called for in the 2000 FCRPS Biological Opinion; there was agreement among the action agencies to implement at least some of the measures called for in that BiOp, such as the spill program, this year, even though the BiOp has not yet been signed. We have a long way to go before the new BiOp is signed, Henriksen replied; also, we had a signed agreement specifically regarding this year's spill program.

After a few minutes of additional discussion, Wagner said it is likely that NMFS will elevate this issue to the IT, if the Monday's conference call does not result in consensus. I'll alert our IT representative that this may be on the horizon, Bettin said.

X. Recommended Operations.

To be clear, said Henriksen, next Thursday is August 31, the end of the in-season management period. Hungry Horse will be at elevation 3540 feet on that date; it will continue to release 4.8 Kcfs until then. We are modeling Grand Coulee drafting to its interim draft limit, 1280 feet, on August 31, she added. At Dworshak, we are on a path to achieve the interim draft limit of 1520 feet on August 31, after which that project will pass inflow or release minimum flow, which could be as low as 1.3 Kcfs.

XI. Other.

A. Lower Snake River Projects – Operating Range. This is traditionally the time of year when we start to discuss restoring the full operating range at the Lower Snake projects, said Bettin – it's a formality, but we need to go through it. After a brief discussion, Bettin said his intent was simply to begin discussion on this issue now and, if possible, to pick a date when MOP will end and operational flexibility will be restored at the Lower Snake projects – perhaps August 31 for Ice Harbor, Lower Monumental and Little Goose. Yoshinaka said the salmon managers will discuss this proposal at Tuesday's FPAC conference call. Abel said she will place this topic on next week's TMT agenda.

B. Stopping Spill for End of Season. We would like a decision about stopping spill at Ice Harbor today, if

possible, Bettin said – it appears the migration is pretty much over at that project. After a brief caucus, Wagner said the salmon managers would like spill to continue, at least through next week's TMT meeting. We would like to stay the course, in other words, he said – we're still seeing juveniles at Lower Monumental. What criteria would you suggest we use to decide when to stop spill at Ice Harbor? Bettin asked. We would like to extend spill as long as possible in order to benefit all components of the population, said Wagner. However, I think once we start seeing indices in the single digits, every day, that would be time to consider stopping spill.

So you're saying NMFS now has no firm criteria as to when spill should stop at the Lower Snake projects? Bettin asked. I'm not sure we ever did, Wagner replied. So FPAC will discuss this again on Tuesday, and will make a recommendation at Thursday's TMT meeting? Bettin asked. Yes, Wagner replied. Bettin said BPA will agree to continue to spill at Ice Harbor, at least until August 31.

C. September Field Trip to Hardy Creek and Pierce Island. Abel reminded the group that this field trip is scheduled for Thursday, September 7.

XI. Next TMT Meeting Date.

The next meeting of the Technical Management Team (and the last of the in-season management period) was set for Thursday, August 31, at the Corps' Northwestern Division headquarters. It was agreed that this meeting will be a face-to-face meeting. Meeting notes prepared by Jeff Kuechle, BPA contractor.

TMT ATTENDANCE LIST

AUGUST 24, 2000

Jacqueline Abel	Facilitator	
Ruth Abney	COE	
Scott Bettin	BPA	
Scott Boyd	COE	503/808-3943
Dick Cassidy	COE	
Kim Fodrea	Reclamation	
Tim Heizenrater	ENRON	
Cindy Henriksen	COE	503/808-3945
Jim Litchfield	Consultant (Montana)	
Kyle Martin	CRITFC	
Mike O'Bryant	Columbia Basin Bulletin	
Chris Ross	NMFS	
Maria Van Houten	ENRON	
Paul Wagner	NMFS	
Marv Yoshinaka	USFWS	

On Phone:

Name	Affiliation	Phone
Eric Barker	Lewiston Tribune	
Ed Bowles	IDFG	
Rick Eichstadt	Nez Perce Tribe	
Steve Hemstrom	AVISTA Utilities	
Dusica Jevremovich	FPC	
Jim Nielsen	WDFW	
Dave Statler	Nez Perce Tribe	
Don Tinker	Seattle City Light	
Glen Traeger	Avista Energy	

TECHNICAL MANAGEMENT TEAM

MEETING NOTES

August 24, 2000

CORPS OF ENGINEERS NORTHWESTERN DIVISION OFFICES – CUSTOM HOUSE
PORTLAND, OREGON

DRAFT

FACILITATOR'S NOTES

Facilitator: Jacqueline Abel

The following is a list of items that the Technical Management Team (TMT) discussed at its meeting on August 24, and that will require future action or discussion, some of them before the next TMT meeting. For a more complete discussion of agenda items, see the meeting minutes when they are posted on the TMT homepage.

1. MINUTES. Any corrections or additions to the minutes of the August 17 TMT meeting should be sent to Cindy by 5 PM on August 25. The notes for the August 21 Emergency TMT conference call were posted on the TMT homepage the morning of the 24, so the will be reviewed at next week's TMT meeting.

2. McNARY TEMPERATURE TEST. There was nothing further to report this week, and Scott Boyd indicated that any recommendation that might come out of the test would go to FPOM, and be considered for the next Fish Passage Plan.

3. PRIORITIZATION LIST of FCRPS Operations Which May Be Used During a NW or SW System Reliability Event, Revised as of 8/10/00. TMT had an extensive discussion about the use of the priority list(s) during recent emergency situations, and how such prioritizations could help them make decisions in the future. There appeared to be agreement that having such a list was useful, and that it should be used as a starting point, then be prioritized for each emergency rather than implemented in the same order each time. It would be useful to have documentation (after the emergency) about what steps were actually implemented and in what order.

Cindy agreed to make a new version of the "list" which would include these changes:

(a) Insert in the title after the word operations: "arranged in an order to reduce biological impact" and put the date of 8/24/00 on this version (b) add a new sentence after the title to explain that this list should be viewed as a starting point, then be prioritized for each emergency rather than implemented in the same order each time (c) #8 delete "draft at 1.5 ft/day" and insert "draft Coulee to 1280" (d) #25 delete "increase to 2 ft/day draft" (e) delete the entire second footnote about the fire at GCL because it is out of date. Scott agreed to add information about what steps

were implemented and in what order to the email he is sending out to TMT after an emergency is over.

4. TMT PROTOCOL FOR DECLARING EMERGENCY OPERATIONS. Cindy distributed a new version of the protocols, but needs additional time to add some more detailed language to Section E (2) to replace the proposed language that says "Additional emergency actions will be taken as necessary". It was decided to put this on next week's agenda after Cindy sends out another version to TMT members via email in advance of the meeting.

5. NMFS FISH MITIGATION MEASURES. NMFS reported that they had reviewed the emergency operations through August 10 and that no offsetting measures are warranted for that period. They have not reviewed the more recent emergency actions, and this item will be on the August 31 agenda.

6. LIBBY OPERATIONS IN SEPTEMBER. After some discussion of this item, BPA and the COE agreed that their baseline for planning through the end of September would be to at 8,000 KCFS. They will come back to TMT if there are changes.

7. RECOMMENDED OPERATIONS. SOR #2000-30 was discussed and the COE and others said they needed more time and information to assess this request, since it was received just before the meeting. A smaller group of representatives of NMFS, the COE, Idaho (Steve Pettit), USF&W, CRITFC (Kyle Martin) and the Nez Perce (Dave Statler) will exchange information and meet on Monday to see if they can reach agreement regarding the study proposed in this SOR.

Cindy will set up a conference call on Monday afternoon and notify those involved. Paul agreed to send the information supporting the SOR, including modeling and the "Evaluation of Adult Salmon, Steelhead, and Lamprey Migrations Past Dams and through Reservoirs in the Columbia River and Tributaries, Adult Salmon and Steelhead Study Plan 2000" cited in the SOR, by Friday at the latest. Cindy will send out the modeling that the COE has done with different assumptions also by Friday. Cindy and Paul agreed to talk further about what degree of coordination the COE would like to make sure has happened with the Nez Perce and Idaho.

TMT empowered this small group to resolve this issue if possible, on Monday. If it isn't resolved, the COE said that their default operation would be to operate Dworshak to 1520 by August 31 and then operate on minimum flow in September. It was agreed that NMFS or USF&W could raise this to the IT, if they choose to after Monday's meeting, without convening another TMT meeting or call.

Jim Litchfield will continue to coordinate with Kim about Montana's tests.

8. STOPPING SPILL FOR END OF SEASON. BPA asked whether spill could stop at Ice Harbor. Co-managers asked that BPA continue spill until FPAC has a chance to discuss this next Tuesday, and it will be put on the next TMT agenda.

9. TRIBAL FISHING SEASON. Kyle Martin will send an email to TMT member about the dates for the tribal fishing season, regarding CRITFC's SOR #2000 C-4.

10. NEXT MEETING. TMT agreed to meet at the COE office next week for an "in person meeting". The conference call-in line will be available for those who cannot attend in person.

AGENDA items (in addition to the regular items involving system operations) for August 31 noted at this meeting included:

- * NMFS Fish Mitigation Measures for period since August 10
- * Revised version of language changes to the Protocols for Emergency Operations
- * Stopping spill at Ice Harbor
- * Ending MOP operation at Ice Harbor, Lower Monumental and Little Goose

REMINDER: TMT is planning a field trip on September 7, 2000, to Hardy Creek and Pierce Island. A meeting room has been reserved at Bonneville Dam and field personnel will be ready to conduct a tour.

I. Greeting and Introductions

The August 24 Technical Management Team meeting, held at the Custom House in Portland, Oregon, was chaired by Cindy Henriksen of COE and facilitated by Jacqueline Abel. 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.

Abel welcomed everyone to the meeting, then led a round of introductions and a review of the agenda.

II. Review of Minutes from August 17 TMT Meeting and August 21 Conference Call.

Abel asked that any changes to the minutes from the last TMT meeting or conference call be submitted to Henriksen by close of business Friday, August 25.

III. McNary Temperature Test Update.

Scott Boyd said there is little new on this topic this week; Dave Hurson and Paul Hoffarth are still planning to develop a series of draft protocols for McNary operations during the late-summer period for inclusion in next year's Fish Passage Plan. Until that proposal is developed, however, there isn't much to discuss, said Boyd; Hurson is very busy reviewing the draft Biological Opinion at the moment. Unless we start to see very high mortality at McNary, there probably isn't much we need to do with this right away, he said.

IV. Emergency Protocols.

The group briefly discussed the emergency actions list, which has gone through a series of iterations at previous TMT meetings and conference calls; Kim Fodrea asked that Item 8 (the 1.5-foot-per-day draft at Grand Coulee) be amended to incorporate a draft limit of 1280 feet at that project. She also asked that Item 25 (increase Grand Coulee draft to two feet per day) be amended to include a draft limit of 1278 feet. Somewhere in between those two items, said Fodrea, I would also suggest that we insert a draft to elevation 1279 -- perhaps Item 16 or 17. Mainly, she said, I just wanted everyone to understand that there is some flexibility to draft Grand Coulee below elevation 1280 under certain emergency circumstances.

Scott Bettin noted that there has been some confusion about the fact that the emergency actions list has not been followed in order during the recent emergencies; that's because each emergency is different, and while this is a rough list of biological priorities, intended to provide guidance, all of these items won't necessarily be used, in order, for each emergency -- we have to take actions that fit the situation, he said. It may be simpler just to delete the word "prioritized," and possibly add an explanatory paragraph to this document, articulating how the list will be used, Bettin suggested. As long as the action agencies can provide a written explanation of what steps were taken, and why, after the fact, that would probably be acceptable, said Marv Yoshinaka. We can provide that, Bettin relied.

After a few minutes of discussion, it was agreed that the TMT will refine this list further during the post-season review and pre-season planning periods. It was agreed to delete the word "prioritized" and insert the sentence "...arranged in biological order, with the intent of reducing biological impacts," as well as a sentence articulating the fact that this list is intended as a starting-point for developing actions in response to power system emergencies, and that the action agencies, with TMT's input, will draw actions from the list in whatever order is most appropriate for a particular emergency. Henriksen agreed to make these changes, and distribute the revised list of emergency actions to the TMT via email. She added that she will make the first two changes requested by Fodrea (after a few minutes of discussion, it was agreed not to make the third change, draft Grand Coulee to elevation 1279, at this time). It was also agreed that, at the conclusion of an emergency, BPA will produce a memo (to be distributed to the TMT membership via email) explaining what actions were implemented and why.

With respect to the emergency notification list, Bettin said he has received no further additions to the list. If anyone else needs to be on the list, said Abel, please email that information to Scott Bettin.

Henriksen noted that she had revised the most recent emergency actions list to incorporate comments made at last week's TMT meeting. Fodrea said the comment at the bottom of the list regarding the fire at Grand Coulee can now be deleted.

V. Discussion of NMFS Fish Mitigation Measures.

At last week's TMT meeting, we talked about the possibility of requesting mitigation for the actions that have taken place for the emergencies through August 10, said Wagner; the

feeling at NMFS is that, for the emergencies that occurred through August 10, no offsetting measures are warranted. We have not yet reviewed the current emergency, Wagner said, but we will be taking a look at any mitigation measures we feel may be necessary. Wagner said he will report back to TMT once that review is complete and NMFS has reached a decision.

VI. Power System Emergency Update.

Bettin said the most recent power system emergency mercifully started and ended briefly. On Monday, he said, it looked as though BPA would not be able to purchase enough power to meet the requested load from California. However, said Bettin, by Tuesday, people were knocking on our doors wanting to sell us power. We'll hope that the cooler temperatures in California continue, he said, because a one-degree difference in California can make a 1,500 MW difference in load. We were able to restore normal fish operations in the FCRPS by 10 a.m. Tuesday, he added.

During this particular event, conditions were very different than in previous emergencies, Bettin added. Our response to the previous emergencies was limited primarily by Intertie capacity, he said; again, this time, we didn't think we had enough access to energy, but it turned out we were able to purchase enough power through the end of the month to avoid drafting Grand Coulee below elevation 1280, or increasing the draft at other projects. It was basically an example of the fact that BPA will buy its way out of an emergency if it possibly can, Bettin said. Henriksen noted that the minutes from Monday's emergency conference call are available via the TMT website.

VII. Libby September Operations.

Henriksen said the Corps is in the process of evaluating how best to get from the end-of-August elevation at Libby to elevation 2411 by the end of December, and has modeled various flow scenarios designed to get us there. We didn't find a lot of flexibility, she said; basically, it looks like we'll need to release 10 Kcfs-11 Kcfs during December in order to achieve that elevation, and there doesn't appear to be a lot of flexibility to make Libby outflow higher or lower, given current low-flow conditions and the fact that we don't know when the rains will begin this fall.

Jim Litchfield said he has been discussing this operation with his clients in Montana; essentially, they favor a very gradual rampdown, starting with a reduction from 8 Kcfs to 7 Kcfs outflow. If we can hold 8 Kcfs through September, that would be preferable, he said. Bettin noted that it will be necessary to release minimum outflow from Libby for an extended period beginning January 1 in order to meet the April 10 refill target at that project if the January water supply forecast is below average. After a brief discussion, it was agreed to hold 8 Kcfs outflow for the present time, and to discuss this operation further once a change is necessary.

VIII. Current System Conditions .

Fodrea said the current Grand Coulee elevation is 1281.5; there are now four pumps back on line at Banks Lake. Over the weekend, she said, we were able to increase Banks Lake elevation to 1565.5, and have since reduced pumping somewhat. Unit 1 in the left powerhouse is now back on-line, which allowed us to restart two pumps at a time, she said; it is somewhat problematic to start and stop those pumps. With four pumps online, we are now able to keep up with irrigation demand, Fodrea added.

At Hungry Horse, Fodrea continued, current elevation is 3542; the project is releasing 5 Kcfs. The plan is to reduce discharge further next week; Hungry Horse will be at minimum outflow (3.5 Kcfs) by August 31. Montana is collecting wetted perimeter data below the project as discharge recedes, Fodrea added. If we need more data points, it may be necessary to vary the Columbia Falls minimum flow for a couple of hours, said Litchfield – we'll talk further if that appears to be necessary.

On the Payette, we're still on track to deliver the full flow augmentation volume, said Fodrea, adding that the problem with the accounting on the Boise system, referenced at last week's TMT meeting, has now been resolved. On the Upper Snake, normally, as we approach the end of the flow augmentation period, we include a gradual rampdown for snails, she added; this year, Idaho Power would like to drop flows abruptly to minimum (200-300 cfs) as soon as the flow augmentation volume is out. We settled that dispute, but we're going to have to retain a small portion of the Upper Snake flow augmentation volume in order to accomplish a more gradual rampdown, she said, adding that this rampdown operation shouldn't have much of an impact on Snake River flows. If you have a problem with this operation, she said, I would suggest that you contact Idaho Power directly.

Henriksen said current Hells Canyon discharge continues to be about 8.9 Kcfs; Brownlee is approaching elevation 2045. At Dworshak, as a result of the conference call on Monday, we stopped spill, and are releasing 10.5 Kcfs through the powerhouse. Current elevation at the project is 1528. The current plan is to reduce flow over the weekend to 8 Kcfs, then down to 4.8 Kcfs on Tuesday, which will take us to 1520 on August 31, Henriksen said.

Last week's average flow at Lower Granite was 27 Kcfs, Henriksen said; average flow at McNary was 148 Kcfs, and in general, flows are continuing to recede.

The spreadsheet shows an average flow of 121 Kcfs at McNary for the week ending August 27, said Chris Ross – is that still accurate? It's probably pretty close, Bettin replied.

Dick Cassidy said there is little to report on the TDG front this week; we stopped spill at Dworshak, as Cindy mentioned, and we spilled to the cap at Bonneville. We were below 115% at Camas/Washougal last week. On the water temperature front, Cassidy said average release temperatures at Dworshak continued to be a fairly constant 48 degrees. He noted that even five miles downstream from Dworshak, air temperatures are starting to have an effect on water

temperature. At Lower Granite forebay, for a good part of last week, there was a cooling trend, but temperatures have started to creep up again over the last few days, Cassidy added.

On the fish migration front, Wagner reported that subyearling chinook indices are declining at Lower Granite (to 1,500-2,000 fish per day) as we near the end of the season. At McNary, we went from an index of about 40,000 fish per day to fewer than 20,000 last week. In general, he said, the migration is continuing, but is falling with flows and chronology within the season.

At Lower Granite, the most recent cumulative index shows that we're approaching the lower confidence interval, Wagner said; at McNary, the cumulative index continues to rise. He said Snake River wild fall chinook indices were very low last week at both McNary and Lower Granite – at Lower Granite, the last wild fall chinook was reported on August 13, and we've been seeing daily indices of 1-2 at McNary over the past week or so. It sounds as though it may be time to consider stopping spill at Little Goose, said Bettin – the run has been flat-lined for the past week or so.

On the adult front, with respect to fall chinook at Bonneville, we're seeing very large numbers for this point in the run – about 5,000 fish per day, Wagner continued. They're also counting about 4,000 steelhead per day at that project, he said – again, large numbers for this time of year. A few fall chinook are starting to show up at Ice Harbor, he said – 269 so far, to date. A few steelhead are showing up in the Snake as well – 32 to date. In general, he said, the adult run is beginning. A total of 214 Snake River sockeye adults have returned to Redfish Lake this year, Bettin added.

IX. New System Operational Requests.

Early this morning, the Corps received SOR 2000-30. This SOR, supported by ODFW, USFWS, WDFW and NMFS, requests the following specific operations:

- Draft Dworshak reservoir to elevation 1500 by September 17 to evaluate the effects of cool water releases from this reservoir on Lower Snake River temperatures and the response of migrating adult salmon and steelhead to the cooler water river condition.

Yoshinaka went briefly through the background and justification for this new SOR; please refer to the full text of SOR 2000-30 (available via the TMT and FPC websites) for further details. He noted that, according to a recent BPA analysis, this operation would result in a refill probability (by June 30) of 98% at Dworshak next year. It would also likely decrease spring flows next year by an average of 1.7 Kcfs. Yoshinaka added that Ted Bjornn is available to conduct the monitoring needed for this evaluation.

Kyle Martin said he assumes the BPA analysis was done using the HydroSim model, which is not intended for use as a forecast model – it is based on the 50-year historic water record, not on starting conditions and on forecast information. Actually, it does take into account starting conditions, Bettin replied. One concern the tribes have is that, looking at the 30-90-day forecast, we’re looking at drier than average conditions during the fall, and HydroSim does not take that information into account, Martin said – that will have an effect on both river flows and on refill at Dworshak.

The group spent a few minutes debating the suitability of the HydroSim model for this type of forecasting. Henriksen said the Corps had looked at the BPA model runs; her suggestion is that BPA needs to use 1.5 Kcfs as the minimum flow for Dworshak from October-April, rather than the 1.3 Kcfs shown in the current model runs, which could have a significant impact on the probability of refill at that project.

A detailed discussion of the impacts of this SOR on Dworshak refill and spring operations ensued. Litchfield observed that the TMT continually calls for flow augmentation from Dworshak during the spring period, and often cuts refill very close. If we start out 20 feet lower, he said, that’s going to make Dworshak refill that much more problematic. Dave Statler said he has a very hard time accepting the idea that, if Dworshak starts out 50 feet below the upper flood control rule curve, that isn’t going to impact the probability of Dworshak refill, or flows during the spring.

There is no question that this operation will affect spring flows, said Wagner – it is an attempt to gain some additional information that will help us avoid our annual debate over the effects of holding an addition volume in Dworshak for use in September. Martin noted that CRITFC had put forward a plan that would have accomplished the same thing at the TMT meeting in Lapwai, but that NMFS had vigorously opposed that plan.

So where do we go from here? Litchfield asked. The question is, will the information gained by drafting Dworshak to elevation 1500 be definitive enough to offset the risk to refill and spring flows?

The discussion then turned to release temperatures at Dworshak; Henriksen said the cool water in that reservoir is nearly exhausted, and a gradual warming trend in Dworshak outflow temperatures will yield a release temperature of about 55 degrees by mid-September. Has NMFS talked about impacts to cultural resources? Rick Eichstadt asked. How will consultation work in this process? Wagner replied that he will need to discuss that issue with others in his agency.

After a few minutes of further debate, Henriksen observed that implementation of this SOR is some distance in the future; it isn't necessary to reach resolution on it today. The big issue is NMFS' consultation with the Nez Perce Tribe and Idaho, she said; in the interim, the Corps' intended operation will be to ramp down to minimum outflow at Dworshak starting September 1.

Ed Bowles said that, while Idaho's preference would be to retain a volume of water in Dworshak above elevation 1520 feet for release in September, Idaho will not object to this additional 20-foot draft, with the caveat that this operation not jeopardize the probability of Dworshak meeting its April 10 flood control refill elevation. I'm not at that comfort level yet, he said – that's why Idaho did not support this SOR at this time.

Martin reiterated that the 30-90-day forecast is predicting drier-than-average conditions in the Columbia and Snake River Basins. We need to keep that in mind, as we evaluate the potential impacts of this proposed operation on refill probability, said Martin. We also need to bear in mind that, while the probability of refill by June 30 may look good in the model studies, if we start the spring season 20 feet down from where we would normally be, that is going to result in proportionately lower Snake River flows until Dworshak refills in June, said Henriksen.

Statler said that, at minimum, more time is needed to examine the study design and to evaluate the risks to refill, spring flows and cultural resources. We need to look closely at the assumptions used in the model study; he said; if that can be done, we may be in a position to propose such a study next year, but I don't think it's very likely for this year.

What aspect of this proposal is different from what the tribes were proposing, in terms of September operations, aside from the additional 20-foot draft? Jim Nielsen asked. We need more time to look specifically at the study design, and what the study is expected to produce, in terms of the data it yields, Statler replied. Our proposal was to retain a volume above elevation 1520 for use in early September, to keep water temperatures cool until ambient cooling kicks in he said – I don't recall what evaluation process we were proposing. Actually, our proposal wasn't a study, said Rick Eichstadt of the Nez Perce Tribe – it was our shot at the best operation for fish. Yoshinaka observed that the proposal in this SOR has gone through the SRWG process.

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will take the form of a fax. Does the tribe have any information on the impacts to cultural resources that have occurred when Dworshak has been drafted to elevation 1500 in previous years? Nielsen asked. I'll have to check, Eichstadt replied.

Perhaps we can agree to exchange the available information in support of this SOR, plus whatever information may be available from the tribes on potential cultural impacts, and agree to discuss this SOR at next week's TMT meeting, Abel suggested. We will need to begin the operation on September 1, the day after next week's meeting, Yoshinaka replied. The group briefly discussed the consultation process; it was agreed that NMFS, the Corps, the Nez Perce Tribe and Idaho will need to discuss the appropriate level and form of consultation for this issue outside of today's meeting. Martin said CRITFC would like to be included in that meeting; a sentiment echoed by Yoshinaka for the Fish and Wildlife Service and Fodrea for Reclamation. After a few minutes of additional debate, it was agreed to schedule a TMT conference call, involving these participants, for Monday afternoon, August 28 (exact time t.b.a.).

What if this small group can't reach consensus, Bettin asked – would NMFS want to raise this issue to IT? We'll need to see what happens on Monday, Wagner replied. He asked whether the Corps has a position on this SOR; Henriksen replied that the requested operation goes beyond the operation called for in the Biological Opinion. This SOR was received only 45 minutes prior to today's meeting, she said; the default operation is to go to elevation 1520 on August 31, and release minimum outflow from Dworshak after that.

Wagner noted that this evaluation is called for in the 2000 FCRPS Biological Opinion; there was agreement among the action agencies to implement at least some of the measures called for in that BiOp, such as the spill program, this year, even though the BiOp has not yet been signed. We have a long way to go before the new BiOp is signed, Henriksen replied; also, we had a signed agreement specifically regarding this year's spill program.

After a few minutes of additional discussion, Wagner said it is likely that NMFS will elevate this issue to the IT, if the Monday's conference call does not result in consensus. I'll alert our IT representative that this may be on the horizon, Bettin said.

X. Recommended Operations .

To be clear, said Henriksen, next Thursday is August 31, the end of the in-season management period. Hungry Horse will be at elevation 3540 feet on that date; it will continue to release 4.8 Kcfs until then. We are modeling Grand Coulee drafting to its interim draft limit, 1280 feet, on August 31, she added. At Dworshak, we are on a path to achieve the interim draft limit of 1520 feet on August 31, after which that project will pass inflow or release minimum flow, which could be as low as 1.3 Kcfs.

XI. Other.

A. Lower Snake River Projects – Operating Range. This is traditionally the time of year when we start to discuss restoring the full operating range at the Lower Snake projects, said Bettin – it's a formality, but we need to go through it. After a brief discussion, Bettin said his intent was simply to begin discussion on this issue now and, if possible, to pick a date when MOP will end and operational flexibility will be restored at the Lower Snake projects – perhaps August 31 for Ice Harbor, Lower Monumental and Little Goose. Yoshinaka said the salmon managers will discuss this proposal at Tuesday's FPAC conference call. Abel said she will place this topic on next week's TMT agenda.

B. Stopping Spill for End of Season. We would like a decision about stopping spill at Ice Harbor today, if possible, Bettin said – it appears the migration is pretty much over at that project. After a brief caucus, Wagner said the salmon managers would like spill to continue, at least through next week's TMT meeting. We would like to stay the course, in other words, he said – we're still seeing juveniles at Lower Monumental. What criteria would you suggest we use to decide when to stop spill at Ice Harbor? Bettin asked. We would like to extend spill as long as possible in order to benefit all components of the population, said Wagner. However, I think once we start seeing indices in the single digits, every day, that would be time to consider stopping spill.

So you're saying NMFS now has no firm criteria as to when spill should stop at the Lower Snake projects? Bettin asked. I'm not sure we ever did, Wagner replied. So FPAC will discuss this again on Tuesday, and will make a recommendation at Thursday's TMT meeting? Bettin asked. Yes, Wagner replied. Bettin said BPA will agree to continue to spill at Ice Harbor, at least until August 31.

C. September Field Trip to Hardy Creek and Pierce Island. Abel reminded the group that this field trip is scheduled for Thursday, September 7.

XI. Next TMT Meeting Date.

The next meeting of the Technical Management Team (and the last of the in-season management period) was set for Thursday, August 31, at the Corps' Northwestern Division headquarters. It was agreed that this meeting will be a face-to-face meeting. Meeting notes prepared by Jeff Kuechle, BPA contractor.

TMT ATTENDANCE LIST

AUGUST 24, 2000

Jacqueline Abel	Facilitator	
Ruth Abney	COE	
Scott Bettin	BPA	

Scott Boyd	COE	503/808-3943
Dick Cassidy	COE	
Kim Fodrea	Reclamation	
Tim Heizenrater	ENRON	
Cindy Henriksen	COE	503/808-3945
Jim Litchfield	Consultant (Montana)	
Kyle Martin	CRITFC	
Mike O'Bryant	Columbia Basin Bulletin	
Chris Ross	NMFS	
Maria Van Houten	ENRON	
Paul Wagner	NMFS	
Marv Yoshinaka	USFWS	

On Phone:

Name	Affiliation	Phone
Eric Barker	Lewiston Tribune	
Ed Bowles	IDFG	
Rick Eichstadt	Nez Perce Tribe	
Steve Hemstrom	AVISTA Utilities	
Dusica Jevremovich	FPC	
Jim Nielsen	WDFW	
Dave Statler	Nez Perce Tribe	
Don Tinker	Seattle City Light	
Glen Traeger	Avista Energy	

**TECHNICAL MANAGEMENT TEAM
MEETING NOTES
August 28, 2000
CORPS OF ENGINEERS NORTHWESTERN DIVISION OFFICES – CUSTOM HOUSE
PORTLAND, OREGON**

TMT Internet Homepage: <http://www.nwd-wc.usace.army.mil/tmt/>

DRAFT

I. Greeting and Introductions

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Henriksen welcomed everyone to the meeting, then led a round of introductions and a review of the agenda.

I. SOR 2000-30 and Dworshak Fall Operations.

Henriksen noted that the purpose of this conference call is to allow for further discussion of SOR 2000-30, received just before last week's TMT meeting. As you'll recall, said Henriksen, SOR 2000-30 requests that Dworshak be drafted to elevation 1500 in September to evaluate the effects of this operation on water temperature and fish passage.

We were unable to reach consensus on this SOR at Thursday's meeting, said Henriksen; there were a number of outstanding questions. The information requested at the meeting has been distributed; you will note that the Corps and BPA studies are not apples and apples. The BPA studies were run using the 50-year record in continuous mode; the Corps study is in refill mode, which stopped and reinitialized each water year at elevation 1520, in Case 1, and elevation 1500 in Case 2. Henriksen explained some of the detailed technical differences between the Corps and BPA model runs, for example, that the Corps model used 1.5 Kcfs, rather than 1.3 Kcfs, as a minimum Dworshak outflow during the fall-early spring period. .

The group spent a few minutes debating the relative technical validity of Corps and BPA model outputs and assumptions. With respect to the study that is being proposed, are there any questions about the temperature of the Dworshak outflow? Henriksen asked. Also, is there any input from IDFG or the Nez Perce Tribe about this SOR?

Henriksen added that Dworshak is quickly approaching elevation 1520; over the weekend, the Corps reduced outflow to 8.5 Kcfs, and will reduce it further, to 4.7 Kcfs later today. Again, said Henriksen, the current goal is to achieve elevation 1520 at Dworshak on August 31. So you've already started ramping down? Steve Pettit asked. Yes, Henriksen replied, as was described at last week's TMT meeting.

Pettit said IDFG discussed this issue at length on Friday afternoon; the upshot of that discussion was that, with the forecast continuing to look very dry, Idaho does not want to risk drawing Dworshak pool down another 20 feet at this time. That would be consistent with the Nez Perce position as well, said Dave Statler. Both Ed Bowles and I feel this research is warranted, said Pettit, but the risk in this particular water and weather year is too great. If we had a study plan in place early in the summer season, so that we could tag more fish, I think the study would be more relevant – perhaps we can agree on a study plan for next year, said Kyle Martin. Jim Athearn added that there aren't many fish in the Lower Granite pool available for tagging.

Chris Ross said he had spoken to Ted Bjornn earlier this morning; it is true there aren't many tagged fish in the Lower Snake at the moment, but Bjornn said he has enough tags at Bonneville to allow him to tag hatchery steelhead, release and track them. He wants to know whether or not to do that, whether or not we draft Dworshak this year, said Ross. We've already told him to do it either way, said Athearn – we need that baseline information. Ross added that Bjornn has said he thinks he can tag four fish per day during the coming weeks, using the depth-sensitive temperature tags. There was general agreement that, even if he can tag only two fish per day, that would be better than no information. In response to a question, Ross said the evaluation would likely run from September 1-17.

Statler observed that, eventually, there needs to be some pointed discussion of the study design – we need to talk about the study duration, number of fish tagged etc. needed to yield valid results, he said.

Has everyone agreed with the operation the Nez Perce and Idaho have endorsed – that is, don't draft Dworshak below elevation 1520 this year? Athearn asked. I understand their caution, said Paul Wagner, but looking at the model runs, according to the Bonneville data, the impact on spring flows is only 1 Kcfs during the spring period, and there is a 98% refill probability. I don't get the same numbers you do, said Athearn – I only see 11 refills over the 50-year water record, based on the Corps' model runs.

The discussion returned to the validity of the Corps model vs. the BPA model; Wagner argued that the difference to refill probability between the two Dworshak elevations is not that great. Martin said that, from his perspective as a hydrologist, 2000 just doesn't appear to be a good year in which to draft Dworshak to elevation 1500.

Isn't there also some construction work at the hatchery, and a very narrow construction window before the fall chinook arrive? Marv Yoshinaka asked. I don't know enough about the situation to say whether or not there would be an impact to construction activities, Statler replied.

Basically, at today's conference call, we were looking for support for SOR 2000-30 from Idaho and the Nez Perce, said Henriksen; that support does not appear to be forthcoming. We will be conducting the temperature study on adult fish this fall, collecting baseline information, she said; do Idaho or the Nez Perce have any input on the temperature of the Dworshak releases? Is it a fair assessment to say that you support drafting Dworshak to elevation 1520 this year, and also support conducting the adult study next year? she asked. That's correct, said Pettit, adding that IDFG strongly supports reserving a portion of the BiOp volume above elevation 1520 to conduct next year's test in September. CRITFC and the Nez Perce concurred; Chuck Tracy said Oregon does not. Based on the results from both the Corps and BPA model runs, he said, it would make more sense to draft to elevation 1500, if there is a better water year next year. Martin said the risk to cultural resources is too great if Dworshak was to be drafted to elevation 1500. That is certainly a significant issue, Tracy agreed; I was speaking only of the risk to refill and spring flows.

Statler said the decision to draft Dworshak to below elevation 1520 should not be made independent of cultural considerations; that call needs to be made in formal consultation between the federal operators and the Nez Perce Tribe.

Yoshinaka said the Fish and Wildlife Service agrees with Oregon and NMFS on this issue. He asked about the potential for an abrupt change in the temperature of the Dworshak release water, noting that USFWS would prefer to see release temperatures in the 50-52-degree range during the month of September. We will be moving all of the units to undershot mode in the next day or two, Henriksen replied; we expect, however, that we will be seeing release temperatures in the 50-degree-plus range starting September 1.

What is the Corps' interpretation of the model results, in terms of the risk of a deeper draft at Dworshak to spring flows and refill probability? Statler asked. Obviously, if you draft to 20 feet below the interim draft limit, your confidence of meeting the April 15 flood control elevation goes down, Henriksen replied. In a dry water year, you sag farther and farther away from that April 15 flood control point during the winter. In 1998, we were more than 20 feet below our April 15 flood control point, after drafting Dworshak to elevation 1500 the previous fall. That was an 86% water year, she added. We did exceed the spring flow objective in 1998, however, said Wagner. That was due to a gigantic rain event over Memorial Day weekend, Henriksen said – personally, I wouldn't bank on that happening again this year.

Statler reiterated that the Nez Perce Tribe concurs with Idaho's recommendation that the 1520-foot BiOp draft limit at Dworshak not be exceeded this year. In response to a question from Henriksen, Robyn MacKay said BPA does not have a position on this SOR. So what I'm hearing is that the SOR is supported by Washington, Oregon, NMFS and the Fish and Wildlife Service, Henriksen said; Idaho, CRITFC and the Nez Perce Tribe do not support it. Again, the plan at this point is to reach elevation 1520 on August 31, and then go to minimum outflow, 1.4 Kcfs if possible, on September 1, Henriksen said.

Wagner commented that the 1995 Biological Opinion covered only the period through August 31; it is silent on operations after that date, as it is on a specific refill probability by April 15. I have outlined the Corps' expectations for operations later this week, said Henriksen. At TMT on Thursday, we discussed the possibility of an IT call tomorrow, she said – do you still feel that is necessary? Have you made a determination that this will in fact be the operation? Wagner asked. Yes, Athearn replied – that is our intended operation.

For next year, is there a potential for NMFS to provide some additional enforcement resources to help alleviate the tribe's cultural concerns? Tracy asked. That issue will be addressed through consultation, Wagner replied. John Lear noted that there have been ongoing studies and assessments of cultural site locations and contents over the past decade; there is now a pretty clear picture of the archaeological sites, he said. That's at least a good starting-point on one of the large cultural resources issues, he said; we should be able to respond to a drawdown situation in a proactive manner. Would the Corps be willing to fund enforcement officers across the reservoirs to keep the pot-hunters away? Martin asked. That's an option, Lear replied; I can't answer the funding question specifically, but there are some options we can take a look at, certainly.

Henriksen asked again whether NMFS feels an IT conference call on this issue is necessary. NMFS does not intend to elevate the Corps' decision, Wagner replied. And our decision is based on the fact that this operation is not called for in the current Biological Opinion, Henriksen said; as we said, the planned adult evaluation will go forward this fall. There are some questions from Idaho and the tribes that we would like to explore for future years of study, she added.

Any objection if we begin ramping down Dworshak flows this evening to 4.7 Kcfs? Henriksen asked. None being heard, Henriksen said the Corps will, again, ramp Dworshak outflow down further, to minimum outflow, on September 1. Henriksen observed that the notes from today's meeting will be available in the next day or two, adding that she will send a memo explaining today's decision to the TMT membership prior to the group's August 31 meeting.

With that, the conference call was adjourned. Notes prepared by Jeff Kuechle, BPA contractor.

TMT PARTICIPANT LIST

AUGUST 28, 2000

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Jim Athearn	COE	
Scott Boyd	COE	503/808-3943
Cindy Henriksen	COE	503/808-3945

On Phone:

Name	Affiliation	Phone
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Mike Mason	COE	
Steve Pettit	BPA	
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Dave Statler	Nez Perce Tribe	
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**TECHNICAL MANAGEMENT TEAM
MEETING NOTES**
August 28, 2000
**CORPS OF ENGINEERS NORTHWESTERN DIVISION OFFICES – CUSTOM
HOUSE**
PORLAND, OREGON

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AUGUST 28, 2000

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Scott Boyd	COE	503/808-3943
Cindy Henriksen	COE	503/808-3945

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COLUMBIA RIVER REGIONAL FORUM

TECHNICAL MANAGEMENT TEAM MEETING NOTES August 31, 2000

CORPS OF ENGINEERS NORTHWESTERN DIVISION OFFICES – CUSTOM HOUSE
PORTLAND, OREGON

TMT Internet Homepage: <http://www.nwd-wc.usace.army.mil/tmt/>

DRAFT

FACILITATOR'S NOTES ON FUTURE ACTIONS

Facilitator: Patricia McCarty

The following is a list of items the Technical Management Team (TMT) discussed at its last meeting that will require future action or discussion.

Minutes & Facilitator's Notes:

The minutes from the August 24th meeting and August 28th conference call are available for review on the TMT web page. Please get comments to the Corps by the end of the day Friday, September 1st. The Corps has agreed to post the minutes in html format, rather than pdf.

End of MOP at lower Snake River projects

The end of MOP will be delayed while juveniles are still passing. The salmon managers will notify the action agencies when the numbers drop enough to end MOP. TMT will discuss this issue during next week's field trip.

End of project spill for fish passage

TMT agreed to end spill tonight at Bonneville, The Dalles, John Day, and Ice Harbor.

Changes to Emergency Operations Protocol

The latest version of the protocol was distributed. In Section E, Emergency Protocol, paragraph 3, the group agreed to change the requirement that one of the federal agencies will provide notification "within one to two hours" to "as soon as practical". In Appendix 2, Generation Emergency Action Plan, Group I Actions and Group 2 Actions will be replaced with a reference to the "List of Operations Arranged in an Order to Reduce Biological Impacts Which May Be Used During a NW or SW System Reliability Event, revised as of 8/24/00". The group confirmed that the list would be used as a starting point for power emergencies, and would be applied as prioritized, with the understanding that actions that do not apply, or would not help, would be skipped.

ACTION: The COE will make the changes and post the updated version on the web page. Members should submit additional corrections to the COE by e-mail. TMT can give its approval as the final version at the next meeting.

ACTION for the future: There was a suggestion to create a similar protocol for non-power emergencies.

Update on chemical spill at 15 Mile Creek

Rudd and Scott gave an update on the herbicide spill in 15 Mile Creek and the clean-up efforts. Clean-up may take up to two weeks. CRITFC stated a preference for pool stability over higher levels and Rudd agreed the COE would do the best that it can. Kyle said the tribal fishery is in effect through next week and he will notify the group if it is extended. There was a request for a TMT field trip to the tribal fishery to learn about it and see how pool levels affect the fishery.

ACTION: Kyle will check and see if he can arrange something within the next few weeks. He will let the group know if it's possible.

Hardy Creek and Pierce Island field trip

A van will leave the Customs House at 8:00 a.m. on September 7th. The rendezvous is at the Bonneville 2nd powerhouse parking lot between 9:00 and 9:15 a.m. People should bring lunch and wear boots. Return to Portland around 4:00 p.m.

Frequency of fall TMT meetings

The frequency will be decided at the next meeting, or later, after the group has a chance to see what develops. A monthly frequency through the fall was proposed.

ACTION: Paul will try to determine what the group will need to start working on to develop the one-year plan required by the Draft BiOp. Paul will report back to the group when he knows more.

TMT items to report to IT

- Emergency Protocol update
- Report on flow augmentation – projects drafted as per BiOp, and Grand Coulee reservoir hit 1280 ft. on 1 September.
- Fairly good movement of fish in a low water year

Next Meeting and Agenda

Next TMT meeting will be on Wednesday afternoon, September 20th, and will be held by conference call.

Agenda items:

- Possible SOR on spawning flows for salmon at Ives Island
- Update on the chemical spill at 15 Mile Creek
- Report from Paul on one-year BiOp plans
- Confirm final version of Emergency Protocols

Meeting Minutes

I. Greeting and Introductions

The August 31 Technical Management Team meeting, held at the Customs House in Portland, Oregon, was chaired by Rudd Turner of the Corps and facilitated by Trish McCarty. 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.

Turner welcomed everyone to the meeting, then led a round of introductions and a review of the agenda.

II. Review of Minutes from August 24 TMT Meeting and August 28 Conference Call.

Turner asked that any comments on these minutes be submitted to him by close of business Friday, September 1.

III. Dworshak Operations Review (Outcome of August 28 Conference Call).

Turner said there was a conference call on Monday to discuss SOR 2000-30; at that conference call, the decision was made not to draft that project below elevation 1520 this year. The current planned operation is to reduce Dworshak outflow to minimum (1.5 Kcfs) tomorrow, after achieving elevation 1520 at Dworshak at midnight tonight. Turner noted that the project may draft slightly during the month of September, in order to avoid unit cavitation and dissolved gas problems. Turner added that Ted Bjornn will be tagging a few adult migrants in the Lower Snake with depth-

sensitive radio tags – somewhere between two and four fish per day – in order to gather baseline adult migration data in the reach above Lower Granite.

IV. End of MOP at Lower Snake River Projects.

Turner noted that the end of the Biological Opinion fish passage season is now at hand; that means we need to take three of the Lower Snake projects out of MOP as the adult fall chinook begin to arrive, he said. Those fish have now begun to arrive; daily passage rates are exceeding the 10-year average for this date, and in short, it looks as though the time has come to restore normal pool operations at these projects, said Turner. We would like to do that today, if possible, at least at Ice Harbor, Lower Monumental and Little Goose, unless we hear otherwise today, he added.

We discussed that at this week's FPAC conference call, and the salmon managers' preference would be for the Lower Snake projects to continue to operate at MOP for awhile, said Marv Yoshinaka – there were so many excursions outside of MOP earlier in the summer that we would like to continue at MOP in order to get as many juveniles out as possible. For how long? Scott Bettin asked. In response to a question, Turner said the restoration of the Lower Snake pools to full operating range was completed by September 12 last year.

The group spent a few minutes discussing adult operating criteria; ultimately, Paul Wagner said the salmon managers would like to revisit this topic at the next TMT meeting. It sounds to me as though NMFS feels there are still sufficient numbers of juveniles moving through the system to warrant holding the pools at MOP for the time being, Turner observed. That's correct, Wagner replied. The Corps is OK with that, said Turner – we'll continue at MOP, at least for the next week.

V. End of Project Spill for Fish Passage.

Turner said the Corps has drafted a teletype, which they intend to send out after today's meeting, stopping spill at Bonneville, The Dalles, John Day and Ice Harbor Dams effective at midnight tonight. Spill for the test program ended earlier this week, Turner added. Yoshinaka said the salmon managers concur with this operation.

VI. Language Changes to Water Management Plan (Emergency Protocols List).

Turner said the revised language is available via the TMT website; he went briefly through the changes that have been made to the Emergency Protocols section of the Water Management Plan. He asked that any changes to this revised language be submitted to him as soon as possible. Bettin suggested one minor change, regarding the time-frame in which the emergency notification is to be sent out; he noted that it may not be workable to provide such notification within one or two hours in all cases. There were no objections to amending the language in the Water Management Plan to reflect Bettin's concern. One or two additional minor changes were offered at today's meeting; Turner said he will incorporate these changes and put the revised version of this document out on the TMT website.

The group devoted a few minutes' discussion to the emergency protocols list itself; in response to a question from Jim Litchfield, Bettin reiterated that the current list is intended to reflect general biological priority. Particularly during the fall season, when no spill is occurring, it may not be possible to follow this list in order, Bettin said – again, this list is a starting-point, and the actual actions taken in response to a given emergency situation may not follow this list in numerical order. In response to another question, Bettin reiterated that the action agencies will provide a written explanation of any emergency actions taken. A few minor changes were offered to the way the list is organized and incorporated into the Water Management Plan; Turner agreed to make these changes and post the revised list to the TMT website.

VII. Update on 15 Mile Creek Chemical Spill.

Turner explained that 15 Mile Creek is near The Dalles Dam; he said there was a truck accident on the bridge that carries I-84 over 15-Mile Creek last Thursday, during which pesticide was spilled into the creek.

Turner said a cleanup crew is currently on-site, working very actively to contain and clean up the spill, purifying

the water, taking out sediment, installing a cofferdam etc. They're trying to keep the chemical from leaking out into the mainstem, he said, because it is extremely toxic to aquatic life, even at very low concentrations.

Turner said the Bonneville forebay is being constrained to a 1.5 foot range for the Zone 6 fishery but is also being held 1.5 feet lower than the requested Zone 6 fishery operation in order to help the cofferdam do its work – 73.5 feet to 75 feet is the current operating range. It will probably be necessary to hold that elevation for the next week or so, while the cleanup work is completed, he said. With irrigation demand dropping and rain in the forecast, there is some concern that flow may overtop the cofferdam, Bettin said. The plan is to clean the creek-bed down to bedrock, he added; the total spill was 2,800 gallons.

The only positive note is that the chemical is heavier than water, and with the current low flows in 15-Mile Creek, most of the chemical has stayed in the creek, said Bettin. In response to another question, Bettin said about 1,500 lamprey have been killed by the spill to date. The cleanup operation is expected to be completed within two weeks. Kyle Martin said the tribes appreciate the fact that the operating agencies are trying to maintain a stable pool elevation for the tribal fishery, even if it is lower than the requested elevation. Turner said the Corps will do whatever it can to operate the system to facilitate the cleanup operation. Again, he said, we anticipate that we'll need to hold the 73.5-75-foot operating range at Bonneville pool through this week's fishery, but that we'll be able to go to an operating range of 75-76.5 feet for next week's fishery.

VIII. Current System Conditions.

Turner reiterated that the Corps is operating Dworshak to reach elevation 1520 by midnight tonight, at which point the project will go to minimum outflow. Average flow was just under 110 Kcfs at McNary last week, with an expected weekly average of 123 Kcfs this week. McNary flows are expected to be in the 115 Kcfs range during the month of September. The week-average at Lower Granite was 23.9 Kcfs last week, with flows of 17 Kcfs-18 Kcfs expected during September.

Pat McGrane reported that the Upper Snake water delivery is now essentially complete; he added that Reclamation is in the process of ramping down Milner flows to minimum. Hungry Horse was at elevation 3539.9 feet as of midnight last night, so that project has fulfilled its obligation, and will be on minimum outflow for the foreseeable future. Grand Coulee elevation was 1280.6 feet as of midnight last night. Banks Lake elevation is currently 1565.6 feet; it has provided three to four feet of bonus salmon flow augmentation water this year. Was Montana able to complete its wetted perimeter study? Wagner asked. It's ongoing, Litchfield replied; the discussion about whether or not to go to a lower flow at Columbia Falls is also still ongoing, but for now, they would like to see the 3.5 Kcfs Columbia Falls minimum maintained.

On the TDG front, Dick Cassidy said there is little to report this week; at Dworshak and Bonneville, because of the step-down in water releases, gas levels have been well within acceptable limits – 105%-106% below Dworshak, and below 115% at Camas/Washougal. Because of low flows in the river, it really wasn't possible to spill to the gas cap at Bonneville this week, Cassidy said.

On the water temperature front, Cassidy continued, we were able to maintain an outflow temperature of 48 degrees from Dworshak for much of last week. Release temperatures are now creeping up into the lower 50-degree range, he said; tomorrow, we will switch to full undershot mode, at which point the release temperature will go back down to about 47 degrees, then gradually increase.

In terms of water temperatures downstream, Cassidy said, at Lewiston, the sensor was coming out of the water due to low flows – in other words, at times, it was recording air temperatures, rather than water temperatures. Below Lower Granite, water temperatures have been cooling off somewhat over the past week, he added. Temperatures should continue to decline over the next week or so, given the current weather forecast, Martin observed.

With respect to fish migration, Wagner said the end of the juvenile passage season is now upon us; at Lower Granite, there was a slight increase in juvenile passage last week, to about 2,000 per day; fewer fish are being seen downstream. Indices have dropped dramatically at McNary, to about 4,000 per day. On the adult front, he said, the

numbers are amazing – at Bonneville, for fall chinook, we've seen 60,000 to date, far above the 10-year average. Fall chinook jacks are also about five times the 10-year average, which suggests that next year could be a good adult return year as well. Adult passage numbers are picking up at Ice Harbor as well, he said – we've seen about 1,600 fall chinook at that project to date. Steelhead numbers at Ice Harbor aren't quite as dramatic, he added – we're about 20% above the 10-year average for this date.

IX. New System Operational Requests.

No new SORs were submitted prior to today's meeting.

X. Recommended Operations.

Turner reiterated that all of the storage reservoirs have drafted to their end-of-season operations, and are now on minimum discharge. Libby continues to release 8 Kcfs and will likely do so through the month of September, although this may require a slight draft at that project.

XI. Other.

A. Hardy Creek and Pierce Island Field Trip. Turner reiterated that this field trip is set for next Thursday, September 7, with the group meeting at 9 a.m. at the Bonneville Second Powerhouse parking lot. Turner said a van will leave from the Custom House at 8:00 a.m. and then from the Forum Building at 8:10 a.m. for those who need a ride out to the project. NOTE: This will be a field trip and site visit only; no formal meeting is planned. Lower Snake MOP operation will be discussed among TMT members during the field trip.

B. Frequency of Fall TMT Meetings. There was general agreement that, for the time being, at least, monthly meetings should be adequate.

XII. Next TMT Meeting Date.

The next meeting of the Technical Management Team was set for Wednesday, September 20 at 1 p.m. Meeting notes prepared by Jeff Kuechle, BPA contractor.

TMT PARTICIPANT LIST

AUGUST 31, 2000

Ruth Abney	COE	
Scott Bettin	BPA	
Dick Cassidy	COE	
Jim Litchfield	Consultant (Montana)	
Robyn MacKay	BPA	
Christine Mallette	ODFW	
Kyle Martin	CRITFC	
Trish McCarty	Facilitator	
Pat McGrane	Reclamation	

Kevin Nordt	PGE	
Rudd Turner	COE	
Maria Van Houten	ENRON	
Paul Wagner	NMFS	
Marv Yoshinaka	USFWS	

On Phone:

Name	Affiliation	Phone
Nengjin Liu	Idaho Power	
Jim Nielsen	WDFW	
Steve Pettit	IDFG	
Don Tinker	Seattle City Light	

COLUMBIA RIVER REGIONAL FORUM

TECHNICAL MANAGEMENT TEAM MEETING NOTES September 20, 2000

CORPS OF ENGINEERS NORTHWESTERN DIVISION OFFICES – CUSTOM HOUSE
PORTLAND, OREGON

TMT Internet Homepage: <http://www.nwd-wc.usace.army.mil/tmt/>

DRAFT

FACILITATOR'S NOTES ON FUTURE ACTIONS

Facilitator: Patricia McCarty

The following is a list of items the Technical Management Team (TMT) discussed at its last meeting that will require future action or discussion.

End of MOP at lower Snake River projects

The COE received a request to end MOP on September 6th. Work will begin on bank stabilization at Hell's Gate State Park this fall, and on the Lewiston levies early this winter. These projects may affect the Lower Granite pool level. The COE will provide an update on this item at the next TMT meeting.

BiOp one-year plans

TMT will develop a water management plan by April 15th, 2001, as it has done in the past. The action agencies will be working on an annual plan to be completed by September 1st, 2001, under the new draft BiOp. TMT's role in the development of the annual plan is to review and comment.

TMT report to IT

IT is requesting a brief update of TMT's decision points and decision criteria for the season. Cindy will put together a bulleted step-by-step review of the season's decisions, including information on fish migration and transportation, and TDG. The final version needs to be ready by the November 1st IT meeting.

ACTION: TMT members should look for the draft by e-mail in about a week, review it, and provide feedback to Cindy as soon as possible.

Memo on Bonneville operations for Lower Columbia Chinook and Chum

Members have been requested to read the memo and consider the proposal. This issue will be discussed at the next TMT meeting.

ACTION: Pat McGrane will get info on capping redds and share it with Jim Nielsen, Paul and Scott, and other TMT members who are interested.

Next Meeting and Agenda

The next meeting is **October 11th, 1:30 p.m.-4 p.m.** and will be by conference call.

Agenda items:

- Hell's Gate and Lewiston levies work effect on Lower Granite pool
- TMT post-season review/report to IT
- Memo on Bonneville operations

The full post-season review will be an in-person meeting, October 25th, 1:00 p.m. to 4:00 p.m.

Meeting Minutes

I. Greeting and Introductions

The September 20 Technical Management Team meeting, held at the Customs House in Portland, Oregon, was chaired by Cindy Henriksen of the Corps and facilitated by Trish McCarty. 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.

McCarty welcomed everyone to the meeting, then led a round of introductions and a review of the agenda.

II. Review of Minutes from August 31 TMT Meeting.

Henriksen asked that any comments on these minutes be submitted to her by close of business Friday, September 21.

III. Update on 15 Mile Creek Chemical Spill.

Henriksen reported that the decontamination operation at 15-Mile Creek is continuing; there were some special operations (lower tailrace elevation) at The Dalles Dam during the first week of September to facilitate the cleanup of the chemical spill. These operations were coordinated with EPA and CRITFC (for the Zone 6 fishery), as well as the cleanup contractor, Henriksen said.

Cleanup continued last week, said Henriksen, but we were able to operate The Dalles tailrace within its normal range for the Zone 6 fishery. Last weekend, September 16-18, there was a need to maintain a very low tailrace elevation at the project to finalize the dredging near the powerhouse at The Dalles; the cleanup went well, and the project is now back to its normal operating range. The expectation is that normal operations will continue, at least over the short term, Henriksen said. In general, the cleanup operation appears to be a success, she added. Any further word on the biological testing of shellfish and other resident species? Kyle Martin asked. I have heard nothing new since the cofferdam was constructed, Henriksen replied.

In response to a question from Scott Bettin, Martin said this Saturday (September 23) will likely be the last day of the Zone 6 fishing season.

IV. End of Lower Snake MOP Operations.

Henriksen said a request to fill the Lower Snake projects out of minimum operating pool (MOP) was received on September 6; because of low flows in the Snake, it wasn't possible to begin filling the pools until September 11. Ice Harbor was the first project filled; Lower Granite was the last, and filled on September 15. Walla Walla District has some concerns about the integrity of the levies in Lewiston, said Henriksen; the district is in the process of investigating the condition of the levies, and there is a contract being let to enhance their stabilization.

We also discovered on Monday that Walla Walla District has let a contract for bank stabilization at Hells Gate State Park, said Henriksen; that is for cultural resources needs. Given that fact, as well as the levy integrity concerns at Lewiston, the Corps is in the process of determining what the upper limit of water elevation is at Lewiston, in terms of meeting the needs at both Lewiston and Hells Gate, said Henriksen; there may be a need to keep Lower Granite pool slightly below full through the winter. Henriksen said she will provide further updates on this topic as more information becomes available. In response to a question from Wagner, Henriksen said Lower Granite pool is currently being held within the top two feet of its operating range; it is likely that the project will be operated in the bottom three feet of its operating range this winter.

V. Endorsement of Final Language for Water Management Plan, Appendix 2, Emergency Operations Protocols.

McCarty said she had placed this item on the agenda in order to obtain an official endorsement of the final emergency operations protocols language developed by the TMT over the course of several meetings. After a brief discussion, no objections were made to the most recently revised version of this language; Henriksen said she will double-check to be sure that all of the changes suggested at the last TMT meeting have been incorporated.

VI. Scope of One-Year Bi-Op Plan.

Wagner said that, since the last TMT meeting, he had checked the new BiOp language to verify the scope of TMT's involvement in the annual planning process; what he found was that the TMT's responsibilities will essentially be the same as they have been in years past. In future years, the TMT will be responsible for reviewing and commenting on the annual Water Management Plan each September; the plan itself will be developed by the action agencies. There is also a five-year BiOp implementation plan, to be developed by September 2001, which will include operational measures, Wagner said.

It was noted that the forecast for the coming year will not be available in time for inclusion in a Water Management Plan developed in September; for that reason, said Wagner, there will be a spring/summer plan, which will be initiated with the January 1 forecast and updated as more complete forecast information becomes available. The bottom line is that, for this year, at least, the TMT's planning duties should be much the same as they have been in years past, Wagner said; we will be assisting in the development of a traditional Water Management Plan this winter, and, at the same time, will likely be asked to review, and possibly assist in the development of, the action agencies' annual plan.

So for the winter of 2000/2001, NMFS expects that the TMT will, as usual, develop its traditional Water Management Plan? Henriksen asked. That's my understanding, Wagner replied.

VII. Report to IT on Year 2000 Operations.

Henriksen said that, at the September Implementation Team meeting, Brian Brown asked the TMT to develop a brief report on the highlights of the 2000 in-season management period, summarizing the various decision points encountered during the past year. One example Brown used was Grand Coulee operations in May and early June; he noted that Grand Coulee was drafting during that period, despite the fact that the flow target at McNary was being exceeded for much of that time, Henriksen said. She added that Brown requested that the TMT's report be presented at the November 1 IT meeting.

I have not yet prepared a draft of this report for TMT review, said Henriksen; she proposed that she draft such a report between now and the next TMT meeting and make it available for TMT review, either via email or the TMT web site.

VIII. Current System Conditions.

Henriksen noted that information on current system conditions is available via the TMT's Internet homepage.

IX. New System Operational Requests.

No new System Operational Requests were submitted prior to today's meeting; Henriksen noted, however, that the Corps had received a letter from FPAC co-chairs Nielsen and Yoshinaka regarding proposed protection measures for the Ives/Pierce Island spawning area this fall and winter. Nielsen suggested that this topic be discussed in more detail at the next TMT meeting; he noted that the September 18 letter lays out FPAC's recommended operation to protect spawning and redds in the Ives/Pierce Island reach based on the last three years of research.

X. Recommended Operations.

No recommended operations were developed at today's meeting.

XI. Other.

A. Response from CRITFC on Request to Visit Tribal Fisheries. Martin said the tribes view any interaction with the state and federal agencies as government-to-government and policymaker-to-policymaker; the tribes are adamant about not having their treaty resources negotiated in the Regional Forum technical groups. Even though this is purely a request for an exchange of information, Martin said, that is how the tribes view that request.

Any reports of problems with the fishery, or with pool operations? Bettin asked. None that I'm aware of, Martin replied – I plan to check in with tribal enforcement personnel some time in the next couple of days to see whether or not any problems have occurred. Martin agreed to furnish a report on this topic at the next TMT meeting.

XII. Next TMT Meeting Dates.

The next meeting of the Technical Management Team was set for Wednesday, October 11 at 1:30 p.m. It was agreed that this meeting will be a conference call. The first TMT post-season review meeting was set for Wednesday, October 25, from 1 p.m. to 4 p.m. at the Corps' Custom House offices. Meeting notes prepared by Jeff Kuechle, BPA contractor.

TMT PARTICIPANT LIST

SEPTEMBER 20, 2000

Scott Bettin	BPA	
Dick Cassidy	COE	
Cindy Henriksen	COE	503/808-3945
Trish McCarty	Facilitator	
Paul Wagner	NMFS	
Marv Yoshinaka	USFWS	

On Phone:

Name	Affiliation	Phone
Ken Dragoon	PaciCorp	
Richelle Harding	D. Rohr & Associates	
Phillip Irvin	Seattle City Light	
Christine Mallette	ODFW	

Kyle Martin	CRITFC	
Pat McGrane	Reclamation	
Jim Nielsen	WDFW	

DRAFT

COLUMBIA RIVER REGIONAL FORUM

TECHNICAL MANAGEMENT TEAM

October 11, 2000 Meeting/Conference call

FACILITATOR'S NOTES ON FUTURE ACTIONS

Facilitator: Patricia McCarty

The following is a list of items the Technical Management Team (TMT) discussed at its last meeting that may require future action or discussion.

Minutes

The note taker did not participate in this meeting. Rudd Turner will prepare a set of minutes. Please get comments on the September 20th minutes to the COE by 5 p.m., October 13th.

Lower Granite pool operation

As explained in an October 4, 2000 e-mail from the COE, the Lower Granite pool will be operated to maintain the elevation at Lewiston at or below 735' until repairs are made to the Lewiston levee. Exceptions to the pool restriction are for flood control operations and regional power emergencies.

TMT report to IT and post-season review

Cindy presented the draft version of the TMT report to IT. Several suggestions were made to help clarify the information, and to extend the report to cover the full year. The report can be accessed through a link on the agenda for today's meeting.

ACTION: TMT members are requested to review the information, and provide feedback to Cindy by October 20th. The report will be presented at the November 1st IT meeting.

This year's post-season review is scheduled for October 25th, 1-4 p.m. Last year's meeting was a full day, but members agreed that this year the 3 hours would be sufficient. The agenda items are listed below.

ACTION: Chris Ross will provide information on flows and fish (magnitude and timing), for this year and with reference to other years.

ACTION: Scott Bettin will put together a summary of the power emergency season for the review.

ACTION: Rudd Turner will find out if Paul Hoffarth's research results can be made available to TMT by the 25th.

ACTION: Patricia McCarty will distribute a list of items from previous meetings and reviews for TMT to decide if any of those items should be part of this season's review.

Memo on Bonneville operations for Lower Columbia Chinook and Chum:

Jim Nielsen reported that chinook have been seen in the channel between Ives and Pierce Islands. The numbers are lower than anticipated. Some chum have been caught in commercial nets below Longview, WA, but they may not from

the ESA-listed lower Columbia River population. It's possible that they may be Sea Resources hatchery coastal chum.

ACTION: Jim Nielsen will also check on and report back to TMT on three items:

- whether the chum genetic information from the last two years will be available for the post-season review
- the possibility of getting genetic information on the chum seen below Longview, and
- whether the Gray's River chum are to be captured and taken to a hatchery

Paul Wagner and Pat McGrane reported on the “capping redds” idea. “Capping” refers to capturing, and doesn’t appear to be applicable to the Lower Columbia situation. Anyone wanting more detailed information can contact Pat.

The salmon managers, through Marv, requested a written response from the action agencies and NMFS on the memo on Bonneville operations. They would like a coordinated response that identifies the reasons that operations have not corresponded to the recommendations in the memo.

ACTION: Paul Wagner, working with the action agencies, will draft a response by Monday, October 16th. The action agencies will try to have any technical information supplementing the response completed by October 20th.

Next Meeting and Agenda

The next meeting is **October 25th, 1 p.m.-4 p.m.** and will be in-person at the COE.

Agenda items so far:

- Review of fish, flows, temperature, McNary operations and power system emergencies
- Review of the year’s process and dilemmas
- Review of last year’s list of “where do we go from here” ideas
- Process decisions: what works, or doesn’t work
- what kind of information is needed and when
- options for increasing efficiency of meetings and info exchange, and time of meetings
- check-in on TMT guidelines (make adjustments?)

The next regular TMT meeting is tentatively set for November 8th, 1-4 p.m.

MEETING MINUTES

Prepared by: Rudd Turner

1. Welcome, Introductions. A meeting of the regional forum Technical Management Team (TMT) was held at the U.S. Army Corps of Engineers, Northwestern Division office, Custom House, Portland, Oregon, on 11 October 2000. The meeting began at 1340 hours. The meeting was chaired by Cindy Henriksen (COE) and facilitated by Patricia McCarty (DS Consultants). Attendees introduced themselves; they are listed at the end of this memo.

2. Review minutes of 20 September meeting. Minutes of the previous meeting, held on 20 September 2000, were reviewed. Jim Nielsen (WDFW) asked that text in section IX. be changed to delete reference to FPAC. The letter prepared by Nielsen and Marv Yoshinaka (USFWS) was from the two of them and was not an FPAC request. No further comments were made. TMT was asked to provide any additional comments should be sent to Cindy or Rudd Turner (COE) by close of business this Friday, 13 October 2000, after which they will be finalized.

3. Lower Granite pool operation. Henriksen updated TMT on the Lower Granite pool operation. COE is concerned about the west Lewiston levee leak and plans to repair it this coming winter. Walla Walla District requested a pool operation not to exceed 735 ft. at Lewiston. That operation went into effect on 20 September, and the forebay restriction will remain in effect until that work is completed. Completion is expected in March 2001. At current flows, this is allowing a Lower Granite forebay operation up to about 734.3 – 734.5 ft., close to a MOP operation (lower limit

= 733 ft.). Turner added that there are two exceptions to this allowed in the RCC teletype, for flood control, and power system emergencies.

4. On a related topic, Scott Bettin (BPA) reported that IPC found redds below Hells Canyon Dam last week, so they are now operating to not exceed 9.5 kcfs discharge. Fall spawning has commenced and the low discharge is expected to last until the first week in December, except as needed to handle short-term rain events. They try for the lowest flow that can be sustained. This is a cause of lower observed Snake River flows. Paul Wagner (NMFS) reported that the first Vernita Bar survey is set for this coming Sunday, 15 October. Bettin stated that the flow will be 36 kcfs from Priest Rapids Dam for the survey. Their initial flow this year will be 65 kcfs, they will shape to this level during the day. This is higher than previous years, based on survey results for the past 10 years or so. Flows could drop a little during peak spawning period to limit elevations of redds.

5. Turner reported on powerhouse outages at Little Goose and Lower Granite which started yesterday, 10 October and are authorized to continue until 1700 hours 12 October. The outages are necessary to accommodate BPA transmission line upgrades near the projects. Little Goose is operating unit 5 on "speed-no-load" to provide station electrical service and spilling to pass inflow. Lower Granite attempted to do this with unit 1 yesterday morning but had to shut the unit down after 30 minutes due to electrical problems. Now they are operating with 100% spill and BPA is providing power into the projects through another line. COE has asked BPA to speed up the work since the changed circulation patterns downstream of Lower Granite in particular appears to be impacting adult passage. Adult counts were lower yesterday than previous days, by half or more. Chris Ross (NMFS) asked if other units were available to provide station service. Turner responded that other units are not available at Lower Granite to operate for station service due to maintenance or mechanical problems. Bettin said that, due to fish passage restrictions, much maintenance work is now crammed into the fall season because it is allowed and the weather is still fairly good. Turner said the project was working with BPA to possibly restore normal operation later today. Bettin said he had just heard that BPA goal was to complete the upgrades by 1400 hours tomorrow. [Powerhouse operation was actually restored approximately 2130 hours that evening, 11 October.]

6. **Report to IT and TMT post-season review.** Henriksen next turned the group's attention to a set of slides that describe the TMT 2000 Year in Review, a presentation for the next IT meeting. The IT meeting is scheduled for 1 November. The presentation is available on the TMT web site as a link to item 4 in today's meeting agenda. The presentation goes through the 2000 fish passage, with slides prepared on a monthly basis, March through August. These highlighted reservoir operations, flows, fish, and water quality significant events. TMT worked through the slides and members made several comments. Slide 4 should use specific dates instead of "end of". Date observed for deepest draft should be added. Brownlee end of month date should be 30 April. For the July slide, add a reference to the McNary turbine unit temperature test. A new slide should be prepared for fall/winter, November 1999 to April 2000, operation which makes the point that TMT expanded to year-round coverage, and including flows provided for chum. Nielsen suggested that the slide say these operations were provided to implement the 2000 Supplemental Biological Opinion. Henriksen asked for comments by the end of next week, 20 October. Revised slides will then be posted on the TMT web page and discussed at the next meeting, on 25 October.

7. **TMT post-season review.** The TMT post-season review meeting was then discussed. Wagner asked that BPA provide a summary of power system emergency operations for the meeting, and include this as an agenda item. Bettin agreed to provide this information. Henriksen stated that the goals, objectives, and decision criteria document should be discussed since there was work done on this early in the year. She said it would be helpful to talk about how to move in that direction next year. Nielsen and Marv Yoshinaka (USFWS) said they would prefer to wait until the Biological Opinions are finalized. Nielsen said his agency had provided comments on TMT, and gave examples of cases where a "cookbook" approach to decisions would not work. Wagner pointed out that there is a difference in views between the action agencies and fisheries agencies, with the action agencies wanting to go further with the concept and the fisheries agencies feeling that the guidelines are already at an appropriate level of development. He said the Biological Opinions express a desire for the action agencies to develop plans, to be reviewed by TMT. Chuck Tracy (ODFW) said that fisheries agencies want to see first whether their comments are adopted in the Biological Opinions before taking this concept any further. Henriksen said this conversation is different from her thinking on discussing criteria at this point. She sees the conversation as more of a process discussion at this time. TMT is not close to developing implementation details; rather, we should talk about role and level of detail for goals and

objectives. Yoshinaka again said he wanted to wait until after the Biological Opinions were signed, and see what they conclude about this issue, before addressing it further.

8. McCarty stated that last year's review developed 8 – 10 items for improvement. She said she would compile those and include them, to assess how TMT did this year in addressing the items. TMT members agreed to include this. There was a desire to review the fish runs in relation to flows and temperatures, to see how well the migrations did this year. Ross said he would put this information together for the next meeting. Tracy said it would be helpful to compare with other years. Others agreed since this year saw normal to below normal flows, in contrast to the last several years. Wagner suggested that temperatures be assessed as well, especially at Lower Granite which is the one place something can be done about it. He also requested an update on the McNary turbine 1 and 2 temperature test. Turner said he would contact Paul Hoffarth (WDFW) and find out when the report would be finalized. Turner said that recommendations from the report could be considered this fall and winter while the Corps' 2001 Fish Passage Plan (FPP) is being prepared. The Fish Passage O&M Coordination Team (FPOM) would consider potential actions at McNary for inclusion in next year's FPP.

9. For the post-season review, members also agreed to discuss TMT process in 2000 – what worked and what did not work. Henriksen said the Thursday morning meeting time is a problem for the Corps due to conflicts with other coordination activities. She would like to see a return to the Wednesday afternoon meeting time. Bettin suggested talking about what information to include in the meetings. What do members need to know about in order to recommend a system operation? Additional points: Who should be included? The Corps requires an open coordination process. What kinds of information are desirable to have ahead of time? For some data, a continuous stream should be available. McCarty said the large number of links to the TMT agendas were a good idea, and helped people follow the meetings and access relevant data and documents. Bettin said SOR deliveries were improved this year, not as many were late. McCarty is going through TMT minutes for the past year or so, to see how well action items were followed up and what still needs to be covered.

10. **Current system conditions.** Nielsen stated that WDFW biologists are checking spawning areas behind Ives and Pierce Islands on Tuesdays. Last week (3 October) there was high turbidity from rain; however, adult fish were observed. This week they saw chinook between the islands. They were fall chinook and appeared to be lower river brights. Tules have not been seen in the area because the total run size is lower than expected. Based on these observations, WDFW concludes that adult fall chinook have been in the Ives/Pierce area for the last week and a half. Some chum salmon also have been observed in the Columbia below Longview, WA. They were taken in commercial catch. None have been observed yet at Ives Island. Tracy said average weight for 5 fish was 11.3 pounds, indicating they were older fish. The fish are early this year. The captured chum may be from a Sea Resources commercial hatchery, for which this is the last year of adult returns. Thus they are not part of the ESA-listed lower Columbia population. Nielsen said WDFW hopes to have genetics studies completed on chum, and he will try to report on results at the next TMT meeting. A total of 75 samples have been collected over the last 2 years. Also 1,200 – 1,500 adult chum are expected to return to Grays River; they will be trapped.

11. **Memo on Bonneville operations.** Yoshinaka asked the action agencies how they intended to respond to the 18 September memorandum from him and Nielsen, regarding protection measures for the Ives/Pierce Islands spawning area. The memo recommended 125 kcfs from Bonneville during 15 - 30 September and 130 kcfs flat discharge during 1 – 15 October, for tules. Flow records indicate that flows have not been near those levels, and they have fluctuated a lot. He asked that the action agencies and NMFS provide a written response to their memo, describing what has happened to flows and reasons for resultant operations. They want it fairly soon, either the end of this week or early next week. Soon it will be late October and chum will arrive; they want to have an idea what to expect later in the fall for flows.

12. Given modeling analysis that is needed, Henriksen said the end of next week, 20 October, would be a reasonable time for a response. Bettin said Bonneville flows have been higher at night and lower during the day. This has resulted in keeping fish from areas where flows may not be able to be sustained. The Corps' SSARR run shows no major change coming. Flows will be less than 120 kcfs, and this will result in keeping fish in lower spawning areas. Bettin asked if, given the low flows that have been observed over the past several weeks, would the flow request have still been as high as it was? This would cause substantial drafting of reservoirs, Grand Coulee in particular, to maintain.

Yoshinaka said yes, it would have been, because the request was strictly for what would be optimal for the fish. Bettin asked, then you have no objection to the operation that has resulted? That is correct, said Yoshinaka; however flows are less than those we recommended. Nielsen agreed, saying this was the reason why the letter was written the way it was. Bettin reported some recent, local rain events in western basins, with brief periods of increased flows. Daily average at Bonneville, however, has been only 110 kcfs over the past two days, so flows aren't staying very high. A Grand Coulee draft of 3 feet per week would have been required to raise flows to the levels requested in the letter. The reservoir would be at about 1,270 feet if the action agencies had operated according to the letter. Pat McGrane (BOR) said the Spokane tribe has asked for elevations of at least 1,283 ft. for kokanee access to hatcheries and traps. Henriksen said the SSARR run assumes a Grand Coulee draft to 1.283 ft. by the end of October with a further draft to 1,280 ft. by the end of November. This will result in flows up to about 117 kcfs at Bonneville in October, and 107 – 117 kcfs through November.

13. Yoshinaka and Nielsen then asked for a written response to their letter by next Monday, 16 October. It may influence discussions at FPAC next Tuesday and a potential SOR. Wagner said he would draft a response, and include analysis to date, by Monday. The Biological Opinion analysis showed that, in an average flow year like this one, it would be hard to meet flows. Tracy said the fisheries agencies would like to hear action agency response to the memo, to see what to do for chum and chinook. They may send an SOR prior to a response.

14. **Recommended operation.** Henriksen said to expect flows of 110 – 115 kcfs through October. Bettin said, for this year, not much can be done in November, let alone increase flow in October. McGrane said an additional 5 feet draft from Grand Coulee would result in an additional 5 kcfs at Bonneville through November. Grand Coulee could go deeper than 1280 ft. in November as long as kokanee needs have been met. The Spokane tribe feels that, this year, it should be pretty safe to go deeper after the end of October. This could take Grand Coulee to 1,275 ft. by the end of November. Wagner said that, according to the chum Supplemental Biological Opinion, water availability is the key. 125 kcfs should be provided for chum spawners if possible, and increase from there if possible. In an average year like this one, that will be skating pretty thin. This will be stated in the Monday memo response.

15. TMT members agreed that NMFS and the action agencies would provide a draft response to the Yoshinaka/Nielsen memo by next Monday, 16 October. Supplemental modeling runs will be provided by the end of next week, Friday 20 October. There will be a possible call next week, if requested by the salmon managers, chaired by Yoshinaka this month. He will let Henriksen know and the Corps will set up a meeting if needed.

16. **New operations requests.** There were no new operations requests for TMT to consider at this meeting.

17. **Other:** Wagner gave a follow-up report on capping redds on the Cedar River. These are not protective devices; rather, they are capture devices to monitor escapement of hatched fish from redds. McGrane said these are emergence traps, 2.5 meters around and with a bucket on the end. 20 redds out of about 350 in the area are set up with traps. They provide a means of determining when escapement is completed, so that an upstream project can again operate in such a manner that the area can be dewatered.

18. **Next meetings:** TMT members agreed to meet every other Wednesday afternoon for a while. Next meeting will be the post-season review, to be held on 25 October, 1300 – 1600 hours. It will be a face-to-face meeting in the Custom House, room 118. The next meeting following this will be held on 8 November, 1300 – 1600 hours. The group will decide at the next meeting whether this will be a conference call or face-to-face meeting.

19. The TMT meeting adjourned at 1540 hours.

Minutes prepared by:
Rudd Turner

Ruth Abney	COE
Scott Bettin	BPA
Scott Boyd	COE
Dick Cassidy	COE
Cindy Henriksen	COE
Patricia McCarty	DS Consultants
Chuck Tracy	ODFW
Rudd Turner	COE
Paul Wagner	NMFS

ON PHONE:

Margaret Filardo	Fish Passage Center
Pat McGrane	BOR
Jim Nielsen	WDFW
Mike O'Bryant Columbia Basin Bulletin	
Chris Ross	NMFS
Marvin Yoshinaka	USFWS

COLUMBIA RIVER REGIONAL FORUM

TECHNICAL MANAGEMENT TEAM

MEETING NOTES

October 25, 2000

CORPS OF ENGINEERS NORTHWESTERN DIVISION OFFICES – CUSTOM HOUSE
PORTLAND, OREGON

TMT Internet Homepage: <http://www.nwd-wc.usace.army.mil/tmt/>

DRAFT

FACILITATOR'S NOTES ON FUTURE ACTIONS

Facilitator: Patricia McCarty

The following is a list of items the Technical Management Team (TMT) discussed at its last meeting that may require future action or discussion.

TMT report to IT

Cindy distributed the draft version of the TMT report to IT, which included changes suggested at the October 11th meeting. Several additional changes were suggested at this meeting. Robyn MacKay provided a short description of the season's emergency excursions, and much of this information was added to the presentation. This portion will be amended to show the actual length of time that spill was modified for each instance. Cindy will revise the report, and Rudd Turner will make the presentation to IT on November 1st. The report can be accessed through a link on the agenda for today's meeting.

TMT post season review

Fish, flow and temperature: Chris Ross presented information on the fish runs for the season. The graphs highlighted the fact that the timing of the migration of different species varied significantly, and varied from previous years. Some of the graphs included flow and temperature information. They can be viewed through the links to DART on the TMT agenda. The group spent some time looking at the data, and floating questions about possible influences. There were several questions about what might be learned if additional information were added to the graphs. The group agreed to have a discussion in more depth at a later meeting.

ACTION: All members should think about the questions they would like to answer through the data. Do you want to isolate influences, or conditions that could help in decision making during the migration season? If so, how could the fish, flow, temperature and operations data be combined to reveal that? Do you want to know the impact of operations decisions on a particular run, or on another aspect of the system, such as temperature? The group will have a brief discussion on this at the next meeting, to prepare for a future review of the fish data.

McNary temperature test Rudd reported that 2 additional test days in early August did not provide any additional useable information due to high winds on the test days. The version of the report available through a link on the TMT agenda for August 1st can be considered the final report. Recommendations are to be developed.

Gray's River Chum Jim Nielsen reported on questions about the Gray's River chum raised at the last meeting. He provided a handout of the planned 2000 Operation, a summary of the supplementation program for brood years 1998-

99, and a WDFW news release on the repair of Duncan Creek Dam. Contact Jim for copies.

CRITFC season review Kyle Martin distributed a copy of CRITFC's review of the 2000 FCRPS operations. The review contains statements of CRITFC's concerns, and several suggestions and recommendations. In March, CRITFC produced a document titled *2000 River Operations Plan* that addresses FCRPS operations and structural modifications for all basin anadromous stocks, including Pacific lamprey. CRITFC is requesting a formal response to the plan from NMFS and the federal action agencies by December 15th, 2000. Contact Kyle for a copy of the final draft of this plan.

TMT process review Due to a shortage of time, the process review was postponed until the November 15th meeting.

System Operations Request SOR 2000-32: After discussion, the action agencies stated that they could not meet the request. The Corps agreed to talk with BPA about maintaining 110 Kcfs minimum at Bonneville, and on November 1st, to use Grand Coulee to increase flow as much as possible. They will try to increase flows to 125 Kcfs, if it can be maintained until May.

ACTION: The salmon managers will be surveying for chum every Friday and Monday, and Jim Nielsen will distribute the results.

Next Meeting and Agenda

The next meeting is **November 15th, 9 am – 1 pm** and will be in-person at the COE. Lunch will be provided. A contribution of \$5.00 per person will be appreciated.

Agenda items so far:

- Review of annual issues, new developments and questions to consider
- Process decisions:
 - what works, or doesn't work
 - what kind of information is needed and when
 - options for increasing efficiency of meetings and info exchange
 - check-in on TMT guidelines
- How should the fish, flow, temperature and operations data be brought together to learn the most from it?

Meeting Minutes

I. Greeting and Introductions

The October 25, 2000 Technical Management Team meeting, held at the Custom House in Portland, Oregon, was chaired by Cindy Henriksen of the Corps and facilitated by Trish McCarty. 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.

McCarty welcomed everyone to the meeting, then led a round of introductions and a review of the agenda.

2. Review of Minutes from October 11 TMT Meeting.

The group spent a few minutes reviewing the notes from the last TMT meeting, offering a few minor corrections. Henriksen said she will incorporate these changes into a final draft of the minutes, which will then be posted to the TMT website.

3. TMT Post-Season Review and Report to IT.

Henriksen reminded the group that the IT has requested a report from TMT on the highlights of the 2000 management season; she noted that a draft of this presentation has been prepared and distributed. A few comments have

been received on this report, Henriksen said, and the changes requested in those comments have been made.

Paul Wagner said he had interpreted the IT's assignment a little differently than Henriksen apparently did; basically, I think what they were after was the policy issues we touched on last year, he said. That's certainly part of it, but this isn't an easy assignment, Henriksen said. Still, if we could highlight key issues we visited this year, I think that would be helpful, Wagner said. Henriksen said this package needs to be finalized in time for presentation at next week's IT meeting; we need to decide at today's meeting whether or not we're comfortable with this presentation, she said.

The group spent a few minutes going through the draft presentation to the IT; Henriksen highlighted the changes that have been made in response to comments received at the last IT meeting. A number of additional comments were received at today's meeting; Henriksen said she will incorporate these changes into a final draft of this document for presentation to IT at the group's November 1 meeting. She asked that any additional changes be submitted to her as soon as possible. Is the group comfortable with having Rudd Turner present this report, as amended, at next week's IT meeting? Henriksen asked. No objections were raised to this action; it was further agreed to inform the IT that, following the completion of its post-season review, the TMT may have some additional issues and information to present at the IT's December meeting.

Moving on, the group turned its attention to some of the technical information from the 2000 fish passage season. Chris Ross presented data on PIT-tag detections for the listed stocks in 2000, graphed against the daily average outflow at each project. Ross touched on chinook ESU PIT-tag detections at Lower Granite, by date through the passage season; he noted that passage began in earnest just after April 10 this year. Steelhead began to arrive at Lower Granite in significant numbers about the same time as the chinook in 2000, Ross said; however, as was usually the case, the steelhead run was more protracted. Ross then moved on to RFL sockeye detections at Lower Granite (run peaked in late May), McNary listed chinook detections (run began in earnest in mid-April and peaked at the beginning of May), McNary steelhead detections, Mid-Columbia steelhead detections (run began in earnest at the beginning of May and ended in late May), chinook and steelhead smolt indices vs. daily average flow at Rock Island, ESU fall chinook PIT-tag detections vs. daily average water temperatures and flows at Lower Granite, the same graph plus daily Dworshak outflow and temperature data, and listed chinook PIT-tag detections vs. daily flow and water temperature at McNary.

Ross also briefly compared PIT-tag detections, flow and temperature at Lower Granite for 2000 vs. 1999 and 1998; as you can see, he said, the run peaked much later in 2000 than it did in 1999, but was reasonably comparable to run timing in 1998, which illustrates why it is very difficult to predict the timing of the Snake River chinook outmigration.

Ross noted that, despite the fact that median passage timing for the Snake River fall chinook run was slightly later in 2000 than it was in 1999, median passage timing for this stock has moved steadily earlier since 1993, and is now approximately three weeks earlier than it was in 1993. In response to a comment from Henriksen, Ross said he will attempt to add Hells Canyon outflow and temperature data to this package of information. It was agreed that the TMT will have some further discussion of this fish passage vs. flow and temperature data at its next meeting.

The group then discussed how best to encapsulate this biological information for presentation to the IT; there was general agreement that NMFS' passage bar graph might provide a useful summary for IT. Pat McGrane observed that one thing this data indicates, to him, is that the salmon managers' 2000 strategy of releasing more storage early in the season in order to put the water on the fish when they were present may well have been the appropriate one.

After a few minutes of additional discussion, Ross said NMFS will produce a few slides summarizing the fish passage vs. flow and temperature data in 2000 for next week's IT meeting. In general, it was agreed to note that the 2000 run was earlier than most of the previous six years, and that it was of a more extended duration, probably because of lower-than-average flows in 2000.

Rudd Turner said the Corps will be terminating transportation at the Snake River collector dams on October 31 this year; transport will continue after that date at McNary. If there is any desire to extend the collection period this year, he said, please let us know as soon as possible. Marv Yoshinaka said that, at its meeting yesterday, FPAC agreed

with the decision to end transport in the Snake on October 31.

Kyle Martin distributed CRITFC's post-season review of 2000 FCRPS operations; he also requested comments on CRITFC's 2000 river operations plan, noting that CRITFC will be producing a 2001 River Operations Plan. He said CRITFC is concerned that there appeared to be no consequences for the fact that the RPA flow targets were not met in 2000. Dan Daley replied that the RPA, as written, recognizes that the target flows will not be met in every water year. It all gets back to flood control, said Martin; the fact that Grand Coulee was drafted so deeply in 2000 that it could never refill detrimentally impacted both fish and system reliability late in the summer. This is an issue that is not going to go away, he said – basically, we need to make better use of the water we have every year.

Martin continued on through CRITFC's post-season review of 2000 FCRPS operations, noting that, in several key areas, river operations advocated by the tribes' 2000 River Operations Plan were not implemented. These included:

- **Improved flood control management** – CRITFC believes that the Corps' overly conservative flood control management forced the early evacuation of reservoir storage that could have been used for spring salmon migrants; it also, in the tribes' opinion, decreased the probability that summer flow targets would be met, and negatively impacted the probability that key storage projects would refill in 2000.
- **Dworschak summer operations** – the Idaho/Nez Perce plan for balanced flow and temperature control from Dworschak was not implemented in 2000.
- **Tribal fall fishery** – In early August, CRITFC requested that the federal operators keep Bonneville, The Dalles and John Day reservoirs stable and within one foot of full during the treaty fishing season. John Day pool was in compliance with this request 92% of the time in 2000; The Dalles pool, 55% of the time, and Bonneville pool, where the majority of the tribal fishery takes place, only 28% of the time. Martin noted that the lack of stable and full pools caused the loss of already-limited treaty fishing opportunities.

Martin said the tribes will be recommending that a number of improvements be made in its 2001 River Operations Plan:

- The Corps should review its flood control management to achieve flood control flexibility, which will provide more storage to ensure flows for spring and summer salmon migration.
- The federal operators and NMFS should consider the scientific justification for a balanced plan for juveniles and adults and should implement the Nez Perce/Idaho plan for Dworschak water management.
- The federal operators should incorporate monthly climate forecast information into long-term seasonal FCRPS operations, and distribute the SSARR model runs to CRITFC and the state fishery agencies as soon as they are available to allow real-time salmon management decisions.
- The federal operators should meet the requested pool operations criteria 100% of the time for the 2001 treaty fisheries.
- Mitigation from the federal operators should be implemented when river operations fail to meet Biological Opinion requirements and other requirements for non-listed stocks. The appropriate mitigation should be developed by the tribes and state and federal fishery agencies.

Martin said that, in the tribes' opinion, the TMT process is fundamentally flawed because there is no independent dispute resolution mechanism through which parties can seek arbitration. However dysfunctional the tribes may feel the TMT is, said Martin, we still feel it has value, particularly in terms of opinion and information exchange. The tribes are willing to work with you to improve the TMT process, he said. In response to a question, Martin requested that CRITFC's post-season review comments on 2000 FCRPS operations be made a part of the TMT record.

Have the tribes thought about what entity might provide independent third-party arbitration? Wagner asked. Federal district court is one option, Martin replied. How do you do that in real time? asked Daley. I don't know, Martin replied.

4. New System Operational Requests.

On October 24, the Corps received SOR 2000-32. This SOR, supported by ODFW, USFWS and WDFW, requests the following specific operations:

- Immediately begin to provide minimum instantaneous flows at Bonneville Dam of 125 Kcfs. Gradually ramp up to an instantaneous 140 Kcfs by November 1.
- Reduce hourly and day-to-nighttime peaking and resulting flow fluctuations.

Yoshinaka reviewed the contents of SOR 2000-32; he noted that this SOR has been submitted because spawning has now begun at Pierce/Ives Island, and a number of redds are in danger of being dewatered.

The group spent a few minutes exploring the requested operations. After a brief discussion, Henriksen said NMFS, the Corps, BPA and Reclamation had formulated a coordinated response; that response, basically, is that chum operations will begin on November 1. So what is going to happen? Jim Nielsen asked. Flows are in the 110 Kcfs-115 Kcfs range at Bonneville, currently, said Henriksen; we don't see any rain on the horizon any time soon, which would help to elevate flows somewhat. Our expectation is that, by November 1, Bonneville outflow will be in the 125 Kcfs range, she said. What about the SOR's suggestions about potential additional sources of water? Nielsen asked. Both Chief Joseph and John Day are run-of-the-river projects, they are not storage projects, and cannot be operated outside their normal ranges, Henriksen replied. Normal operating range is 950-956 feet at Chief Joseph; below elevation 950, there are cultural resource sites that are affected. With respect to the Upper Snake projects, said Pat McGrane, we have used up the 427 KAF for this year, and as yet have no legislative approval from the State of Idaho for next year's releases. The projects are not going to be drafted for flood control this winter; rather, they will be filling. We understand that, said Nielsen; our request is to delay that refill.

So what is the planned operation at Bonneville next week? Nielsen asked. We expect flows in the 110 Kcfs-115 Kcfs range next week at Bonneville, Henriksen replied. We will be exploring the available water resources after November 1, she said; however, the only storage available at this time is in Grand Coulee. In response to another question from Nielsen, Henriksen said the water sources mentioned in the SOR are not available resources; the Corps' record of decision on chum did not include using at any of these projects. We're trying to think outside the box here, to get flows up while the chum need it, Yoshinaka said. When would you suggest we put that water back in? Henriksen asked. Particularly at Chief Joseph and John Day, because of power needs, any water we take out would have to be put back within the same week – otherwise, the projects lose their operating head.

So in summary, then, the action agencies are not willing to commit to flows of 125 Kcfs next week and 140 Kcfs by November 1, Nielsen said. Particularly in a year when we have only 70% of our normal carryover volume in the Upper Snake projects, Reclamation is unwilling to release water from those projects, said McGrane.

At this point, McGrane requested a brief caucus. When the meeting resumed, Henriksen said the Corps and Reclamation will talk to BPA about maintaining the 110 Kcfs minimum outflow at Bonneville Dam through the weekend. On November 1, she said, we are going to use the storage in Grand Coulee to keep flows as high as possible at Bonneville, and will make best efforts to meet 125 Kcfs, with the caveat that they need to be able to maintain 125 Kcfs – we don't want to increase flows, then suddenly have to reduce them. Frankly, rain is the key here, said Henriksen – we need to start getting some precipitation if we are going to be able to augment flows in the lower river through the winter. So on November 1, you plan to bring Bonneville flows up, but that depends on the weather? Nielsen asked. Yes to both, Henriksen replied. Again, said Henriksen, 125 Kcfs will be the target, but the actual flow may be somewhat lower. Christine Mallette added that another redd survey is scheduled for Monday, October 30.

5. Recommended Operations.

Recommended operations were covered during the previous agenda item.

6. Other.

A. McNary Units 1 and 2 Temperature Test. Turner reminded the TMT of the report they received on the McNary Units 1 and 2 temperature test in early August; consider the report you received in early August to be final, he said. There were two additional test days, but both were windy days, and did not yield any further useable test data. He noted that, in an August TMT presentation, the study showed a 1-5 degree F drop in peak daily temperatures at various places in the McNary bypass and fish handling facilities when Units 1 and 2 are not operated. If appropriate, the Corps will likely include recommendations for McNary operations, based on the results of the test, in the draft 2001 Fish Passage Plan, Turner said.

B. Chum Update. Nielsen said he was asked to report back on several chum-related items at the last TMT meeting, beginning with genetic analysis of 75 chum samples. About 50 of those samples were stranded juveniles, he said; the remainder were adults. One complication is that all of the juvenile samples appear to be from only two different redds; results from the analysis are not yet available, but unless we can get some more adult samples, we may not have the desired statistical validity, he said.

With respect to chum taken in the commercial fishery, very few are taken, so sample size is also a problem there, Nielsen said. The third request had to do with our plans for Grays River; you will recall that, last year, there was a major flood event in that system, which is a tributary to the Lower Columbia. There is a small population of chum in the Grays River, said Nielsen; there is an artificial channel at Gorley Springs, where most of the spawning takes place. That artificial channel was completely blown out last year, Nielsen said.

The plan for this year is to capture as many adult chum as possible, using a 20-foot hoop trap at the covered bridge, as well as a 100-foot beach seine and possibly a tangle net, Nielsen continued. Captured fish will be transported to the Grays River Hatchery for spawning; the target for this year is 400,000 eggs, about double last year's take. This will require about 130 females and a similar number of males, Nielsen said. This is the third year of the Grays River supplementation program, he added, distributing a handout containing detailed information on the supplementation program.

Nielsen also distributed a news release on Duncan Creek, where WDFW, in cooperation with local landowners, recently completed some habitat restoration work to improve salmon passage.

7. Next TMT Meeting Date.

The next meeting of the Technical Management Team was set for Wednesday, November 15; it was agreed that this will be a face-to-face meeting. Meeting notes prepared by Jeff Kuechle, BPA contractor.

TMT PARTICIPANT LIST

OCTOBER 25, 2000

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COLUMBIA RIVER REGIONAL FORUM

TECHNICAL MANAGEMENT TEAM MEETING NOTES November 15, 2000

CORPS OF ENGINEERS NORTHWESTERN DIVISION OFFICE – CUSTOM HOUSE
PORTLAND, OREGON

TMT Internet Homepage: <http://www.nwd-wc.usace.army.mil/tmt/>

DRAFT

FACILITATOR'S NOTES ON FUTURE ACTIONS

Facilitator: Patricia McCarty

The following is a list of items the Technical Management Team (TMT) discussed at its last meeting that may require future action or discussion.

TMT report to IT: Rudd Turner reported on the feedback from IT on the TMT report. EPA did a temperature analysis and concluded that the temperature control on the Snake River this year was as good as it could have been. Also, Montana expressed appreciation for the summer operation decisions for Libby. Congratulations, TMT! IT suggested that TMT take a look at two issues: power system emergency guidelines and refill probabilities. IT noted that the guidelines were implemented differently than the priority listing would suggest, and wants TMT to be sure there is a good response plan in place. IT suggested that TMT explore the meaning and impact of refill probabilities. TMT will need to discuss how it wants to handle this issue in future meetings. There were two suggestions from the group today that can be discussed at the next meeting. The first was a group training on the issue to inform discussions about how the refill probabilities affect TMT decisions. The second was that TMT could do some modeling of refill probabilities to help with in-season decisions.

Update on 2000 BiOp 1 and 5 Year Plans: John Palensky explained the process in the BiOp for the development of the 1 and 5 year plans. The Hydro Plan, which includes the Water Management Plan, is to be developed and coordinated through the Forum. The action agencies are encouraged to involve the states and tribes in the development of the plans. NMFS will also be talking to the states and tribes during its review of the plans, prior to a finding.

Post-season review – process: There was a good discussion about what worked, what is needed, and some options for the upcoming year. The following is a summary of some of the ideas discussed and the suggestions relating to them.

Frequency of meetings: There was agreement that less frequent in-person meetings (bi-weekly) could be a good idea, especially given the expected workload in 2001. To do this, the group will need to work out how they can make operational decisions for two weeks at a time. One suggestion was that during the development of the water management plan, TMT could send yearly issues to IT for guidance, in the hopes of developing an agreed-on strategy for those issues. Conference calls could supplement the meeting schedule, as needed. Some clarity on guidelines for conference calls was requested.

Scheduling of meetings: Thursday remains a bad day for the Corps. One suggestion raised earlier in the year was to move the meetings to Friday morning. This seemed workable for most, given the few issues raised to IT. Another suggestion was for the action agencies and salmon managers to meet early in the week, share fish and water information, and jointly develop an operation. This suggestion had two purposes. The first was to provide a process to share fish and water information as early in the option development process as possible. The second was to experiment with moving beyond the negotiation customs of TMT to a joint effort to reach the mutual goal of recovery. The group will need to explore this idea in upcoming meetings.

ACTION: Members should give some thought to this approach and be prepared to discuss it in the context of how TMT is going to approach decision making in 2001. The questions raised were: If the salmon managers were to consider writing requests that took into account what was “prudent and possible”, how can they be assured that the action agencies have looked at all possibilities? How can the group deal with the different perspectives on what is prudent and possible?

Agendas: TMT could experiment with changing the agenda, putting the SOR decisions at the beginning, with a decision deadline. The information and planning items would follow.

Information: Having the fish information via the web seems to be working well. There was a suggestion made after the meeting that the report on the fish could be shortened and targeted, with just the highlights covered. If members look at the information before the meeting, there may be no need to go through the data on the web pages. Additionally, the information could be presented with corresponding hydrograph data. Other suggestions for information were for the spreadsheet (or a substitute tool) to give ranges, and that a “whole river” picture be developed. This “whole river” picture would incorporate fish movement, flow, temperature, gas, and reserves.

ACTION: Members should think about how the current information can be combined, or supplemented, to provide the kind of understanding of conditions and effects they need to make longer range decisions.

SOR 2000-33: The group discussed the request, and the understanding is that the flows will remain at the current range of 130-135 Kcfs through December.

NPPC Power System Reliability Issues: Robyn MacKay reported that a new group, the Regional Reliability Group, rather than BPA, is now making decisions on power operations on a regional basis. Now, it is only when BPA cannot purchase enough power to cover regional needs that it will change operations at Federal projects for which BPA markets energy. Robyn offered to arrange a training for TMT on power issues, if desired.

Next Meeting and Agenda

The next meeting is **November 29th, 1-4 p.m.** and will be in-person at the COE.

ACTION: Jim Nielsen agreed to try to set up a speaker on the Hanford stranding report for the next meeting. Paul Wagner or Mary Yoshinaka agreed to try to get Billy Connor to give a year end review at the meeting on December 12th.

Meeting Minutes

I. Greeting and Introductions

The November 15 Technical Management Team meeting, held at the Customs House in Portland, Oregon, was chaired by Cindy Henriksen of the Corps and facilitated by Trish McCarty. 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.

McCarty welcomed everyone to the meeting, then led a round of introductions and a review of the agenda.

2. Review of Minutes from October 25 TMT Meeting.

The group spent a few minutes reviewing the notes from the last TMT meeting, offering a few minor corrections. Henriksen said she will incorporate these changes into a final draft of the minutes, which will then be posted to the TMT website.

3. Report Back from November 1 IT Meeting.

Rudd Turner reported that he had provided a presentation on the 2000 season in review at the November 1 TMT meeting, as discussed at the October 25 TMT meeting. Several issues were raised in the course of that presentation,

Turner said; these included the 2000 flood control operation and the implications of going from a 50% to a 75% refill probability. The IT suggested that the TMT have some discussion of using the higher refill probability in its future decision-making during its pre-season planning, Turner said; there was considerable discussion of the pros and cons associated with the use of the higher probability of refill.

The other issue that was discussed at the November 1 IT meeting was the various power system emergencies that occurred in 2000, Turner continued; the IT suggested that the TMT take a hard look at its emergency guidelines this winter, to ensure that there is an adequate response plan to cover all of the various contingencies that may arise. There were also some compliments, Turner said; Montana expressed their appreciation for the summer operation at Libby, and the fact that we were able to hold 8 Kcfs discharge from that project. In addition, said Turner, at that meeting, Mary Lou Soscia said EPA had done some analysis of 2000 Dworshak operations, and the Snake River water temperatures that resulted from our use of that project; EPA's conclusion was that the 2000 temperature control operation was as good as it could have been, given flow and weather conditions last summer.

4. Continuing Post-Season Review.

NMFS' John Palensky briefed the TMT on the development of the one- and five-year implementation plans called for in the 2000 BiOp, in particular, the mechanisms by which the states and tribes will provide input into the development of those plans. With respect to the BiOp itself, said Palensky, December 15 is still the target date for the delivery of a final Opinion. NMFS is in the process of providing the revised sections of the BiOp to the action agencies; these include Section 9.5, which covers the development of the one- and five-year plans.

The current thinking is that the initial one- and five-year plans will be developed by the action agencies by March 2001, Palensky said. The one-year plan is expected to be a little rough, at that point, but it will feed into the Council process. He noted that there are a variety of components included in the one- and five-year plans, including the Hydro plan, which will include the Water Management Plan, the Capital Investment Plan, the Water Quality Improvement Plan, and the Operations and Maintenance Plan. The development of the entire Hydro plan will be coordinated through the Regional Forum process, Palensky said; that means that the Water Management Plan will be developed through the TMT, as is currently the case.

Palensky noted that the new BiOp does away with the old Executive Committee; at least for the time being, the Implementation Team is the court of last resort within the Regional Forum. Beyond that, he said, the Regional Forum structure is unchanged. In response to a question from Scott Bettin, Palensky said the other major components of the one- and five-year plans include habitat and hatcheries, which will be coordinated through the Northwest Power Planning Council process, and harvest, which will continue to be coordinated through the U.S. v. Oregon process.

Doug Arndt provided his perspective of what the five-year plan is and isn't. It is an implementation plan for the measures in the Biological Opinion, said Arndt; what those measures will include is still being finalized, but at this point, I think we have a pretty good idea. The action agencies – BPA, Reclamation and the Corps – have agreed to develop the five-year implementation plan; it has two main components: the hydrosystem, and the offsite mitigation components, said Arndt. The action agencies are still in the process of figuring out exactly how this is going to happen, he said; in particular, how we're going to coordinate this planning process with the tribes.

Palensky noted that each year, after the one-year plan has been finalized, NMFS will issue a finding to the action agencies, saying either that the plan is adequate and meets NMFS' requirements, or that it is inadequate. In essence, said Palensky, as we begin to resolve some of the critical uncertainties and adapt our management approach in response, these one-year plans will comprise a written record of how the BiOp was amended.

Will each of the "Hs" have its own one-year plan? asked one participant. That's something the action agencies are discussing, Palensky replied; this is a huge task, and the details of how it will be tackled have yet to be completely worked out. In their comments on the draft BiOp, many of the states and tribes expressed concern about how they will fit into the one- and five-year planning process, and whether or not they were going to have an opportunity to provide meaningful input into those plans, said Palensky. While the responsibility for the development of those plans clearly rests with the action agencies, he said, NMFS is encouraging those action agencies to involve the states and tribes, to

the greatest extent possible, in the development of those plans. There will be opportunities for the states and tribes to provide their input through both the Council/CBFWA and Regional Forum processes, if they choose to participate, Palensky said; however, it's doubtful that the tribes would look at that as consultation. Whether or not we have a duty to consult with the tribes on the development of the one- and five-year plans is something each action agency will have to evaluate for itself, said Palensky.

Arndt noted that, whatever form of state and tribal involvement becomes a part of the process, the Corps is not interested in re-arguing the merits of the Biological Opinion in the course of developing the one- and five-year plans. These are implementation plans, he said; everyone has already had ample opportunity to comment and make their views known about the contents of the Biological Opinion, and NMFS has responded to those comments. In other words, said Arndt, if a measure is called for in the BiOp, the Corps isn't interested in debating whether or not that measure should be implemented.

Kyle Martin noted that the four CRITFC tribes – the Nez Perce, Yakima, Umatilla and Warm Springs tribes – have specific, guaranteed treaty rights with respect to Columbia River salmon. If the action agencies propose an action that is going to impact those treaty resources, the tribes must be consulted – there is no ambiguity in the law, Martin said.

Let me be clear, said Arndt – the Corps will not be proposing an action, it will be implementing an action called for in the RPA. We will be assuming that the regulatory agencies, in developing that RPA, have gone through the necessary consultation processes. We intend to work with the tribes, said Arndt, but again, we don't want to re-argue the BiOp every step of the way. There is room for a healthy discussion of regional priorities within the one- and five-year planning process, he said, but in terms of the specific measures laid out in the BiOp, the Corps has no interest in being put in a position of having to defend the biological basis of the RPA. And again, said Palensky, the Regional Forum is where a lot of that discussion will be taking place, so if you can encourage more tribal engagement in the Regional Forum, that would be very beneficial.

In response to a question from Jim Nielsen, Therese Lamb of BPA said the current schedule calls for the delivery of the first final five-year plan in September 2001. One of the components of that five-year plan will be a five-year Water Management Plan, she said, so this is a heads-up that the TMT is going to need to take a broader look at water management strategies in the future. It also sounds as though the TMT will need to start work on the one-year implementation plan for 2002 while we're still in the in-season management period this summer, observed Scott Bettin.

Will the action agencies be developing the implementation plans for the non-hydro Hs as well? Nielsen asked. The short answer is yes, Arndt replied; because the RPA will direct us to implement off-site actions, we have to have a plan. However, offsite mitigation is a huge black box – particularly in the habitat and hatchery arenas, there are a huge number of initiatives underway at the local, state and tribal level, and we have to find a way to integrate those initiatives into the planning process. Nielsen suggested that, at some point, it would be appropriate for NMFS to schedule a presentation to Washington's Joint Natural Resources Council on the one- and five-year plans.

With respect to the TMT process for 2001, McCarty noted that there were several main issues raised in the course of the TMT's discussions in 2000, in which various TMT participants have expressed interest in resolving in a more effective way next year. These issues included alternative operations for spring flow augmentation, Dworshak operations and coordinating hatchery releases. There were also questions about which aspects of the TMT process worked and which didn't in 2000, what kind of information is needed and when, and how the efficiency of the TMT meeting process can be improved, possibly through less-frequent or shorter meetings.

Paul Wagner said that, from his perspective, the keen interest in the TMT process on the part of power marketing agencies made him wonder whether or not the process was really working. At times, he said, this felt more like a power marketers' forum than it did a technical forum. Wagner added that it would probably be helpful to resolve the question of the frequency of TMT meetings in advance, rather than having to revisit it every week during the season. The group devoted a few minutes to the question of TMT meeting frequency; Pat McGrane suggested that the group go to a bi-monthly meeting schedule during the 2001 in-season period, while others argued that last year's flexible approach, in which face-to-face meetings and conference calls were alternated on an as-needed basis, probably makes sense for 2001.

as well. Ultimately, there seemed to be agreement that the TMT will go to an every-other-week meeting schedule, with conference calls on an as-needed basis, during the 2001 in-season management period.

There was also general TMT agreement that the group's Internet homepage is an extremely useful medium for information exchange, and that, if anything, it should be enhanced in 2001. The group then discussed the IT's suggestion that the TMT investigate the implications of using a 75% or higher probability of refill in its planning and operational decision-making, rather than the 50% probability that has been used in the past; there was general agreement that it would be helpful to invite representatives from the River Forecast Center to attend an upcoming meeting to discuss this issue in detail.

Moving on to what didn't work in 2000, Wagner said that last year, unlike other years, the in-season flow forecasts proved to be very inaccurate. That mainly had to do with the type of water year it was, said Bettin – it's hard to predict precipitation that basically drops off the table in early June. Henriksen noted that, in 1998, the forecast was equally inaccurate; in that case, however, precipitation was much higher than forecast, so no one complained.

The group devoted considerable discussion to agenda structure; there was general agreement that operations-related topics and issues should be placed first on the agenda. Ultimately, it was agreed to revisit these and other organizational issues as the TMT's post season review/pre-season planning effort continues.

5. Current System Conditions/New System Operational Requests.

On November 8, the Corps received SOR 2000-33, covering flows at Bonneville Dam to ensure adequate incubation flows in the Ives Island spawning area. This SOR, supported by ODFW, USFWS and WDFW, requests the following specific operations:

- Immediately increase instantaneous flows to 140 Kcfs.
- On November 15, increase Bonneville Dam instantaneous flows to 150 Kcfs.
- Maintain instantaneous flows at Bonneville Dame of 150 Kcfs through November 30.

Nielsen spent a few minutes going through the contents of this SOR, a full copy of which can be obtained via the TMT's internet homepage. At the close of Nielsen's remarks, Turner said he had discussed this SOR with Robyn MacKay of BPA; in looking at the SSARR run and the precipitation forecast, it looked to the Corps and Bonneville as if increasing flows above the 125 +/- 5 Kcfs range at that time was a little too risky. Our decision was that we would hold Bonneville flows in the 125 +/- 5 Kcfs range, at least through the weekend, to see whether anything changed, Turner said. He noted that he had sent out an email to that effect to the TMT membership on November 9.

Martin distributed a paper titled "Winter Weather 2000-2001 Forecast," which he presented to the American Meteorological Society meeting on November 9. He noted that, according to his forecast, during the month of November and December, temperatures are expected to be slightly below normal, while precipitation is expected to be above average (120%-130%); in January, temperatures are expected to be near normal, with precipitation predicted to be 100%-120% of normal; in February, both temperatures and precipitation are expected to be near normal, while in March, temperatures are expected to be slightly above normal, with precipitation in the 70%-90% of normal range.

Essentially, what we're likely to see is an early, wet winter, with the possibility of late winter warming and an early snowmelt, Martin said; the CRITFC tribes would prefer to see the action agencies maintain flows in the 125 Kcfs range at Bonneville for the time being, in order to keep as much water as possible in the storage reservoirs.

McGrane said Reclamation agrees with Bonneville, the Corps and CRITFC about the risks associated with increasing Bonneville flows at this time; our intention, however, is to revisit the current operation every week, as weather and flow conditions change, he said. After a brief discussion, at McCarty's request, Bettin re-stated the planned operation as follows: maintain Bonneville flows in the 130 Kcfs-135 Kcfs range, probably through the end of December, unless higher-than-expected precipitation allows for an increase in flow at that project.

7. Recommended Operations.

Recommended operations were summarized during the previous agenda item.

8. Other.

A. NWPPC Power System Reliability Issues. Robyn MacKay said that, with the onset of the winter season, the action agencies have begun thinking about power system reliability issues during this high-demand period. She noted that, in 1998, the action agencies developed a cold snap plan; that plan is currently being updated to include more of a regional perspective. MacKay noted that the Northwest Power Planning Council is leading this effort; the updated plan is expected to be available next week. MacKay said she could ask someone from the Council to brief the TMT on the revised winter emergency plan, if the group is interested; there was general agreement that this would be useful.

9. Next TMT Meeting Date.

The next meeting of the Technical Management Team was set for Wednesday, November 29; it was agreed that this will be a face-to-face meeting. Meeting notes prepared by Jeff Kuechle, BPA contractor.

TMT PARTICIPANT LIST

NOVEMBER 15, 2000

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COLUMBIA RIVER REGIONAL FORUM
TECHNICAL MANAGEMENT TEAM
MEETING NOTES
November 29, 2000
CORPS OF ENGINEERS NORTHWESTERN DIVISION OFFICES – CUSTOM HOUSE
PORTLAND, OREGON

TMT Internet Homepage: <http://www.nwd-wc.usace.army.mil/tmt/>

DRAFT

FACILITATOR'S NOTES ON FUTURE ACTIONS

Facilitator: Patricia McCarty

The following is a list of items the Technical Management Team (TMT) discussed at its last meeting that may require future action or discussion.

Minutes and Facilitator's Notes: The minutes and notes were not reviewed in the meeting. Please submit comments and requests for changes to the Corps.

SOR 2000-34: This SOR, dated November 21st, requested an increase of flow at Bonneville to a minimum of 150 Kcfs for chum spawning. Due to low precipitation the action agencies have been operating the system to attempt to meet a Bonneville discharge of 130-135 Kcfs. BPA informed TMT that treaty storage regulation releases out of Arrow rose substantially, and posed a question to TMT about whether the release should be passed through the system or stored at Grand Coulee. BPA recommended that Bonneville flows be increased to 140-145 Kcfs through December to pass the release through the power system. The COE needed time to evaluate the situation before responding, and agreed to complete the evaluation and respond to the group by the end of the week.

Chum monitoring and Chinook forecast: Jim Nielsen distributed a memo on the 2000 Vernita Bar Redd Survey, and the TAC 2001 forecast numbers (up from the 2000 numbers). Contact Jim for copies.

TMT process discussion:

Frequency and schedule of meetings: The group agreed to meet in person every other week, on Wednesday afternoons, with conference calls as needed. The next three meeting dates are: December 12th, 1-4 p.m. (this is a Tuesday); January 10th, 1-4 p.m.; January 24th, 1-4 p.m.

Meeting/decision preparation: Discussion continued on options for coordinating on sharing information and developing proposed operations. Several ideas surfaced, and are listed below. The group will explore these in future meetings:

- Salmon managers and action agencies could confer after the Tuesday morning FPC meeting to exchange fish and water information, although not necessarily to jointly develop an operation plan.
- The use or development of SORs could change. SORs may not always be needed, such as when there is a shared understanding of what is likely to happen. The group could develop some other process for deciding system operations, eliminating SORs in their present form. SORs are useful for keeping a record of salmon managers' decisions, but the other means of creating a record may serve that purpose as well, particularly if each member's position is recorded. SORs could be renamed, and focus on biological needs and priorities, with the action agencies providing a similar source of water and power information and priorities. All members of the group could consider

the information together as the group weighs the options and risks.

- The action agencies could supplement the water and system information. The assumptions that go into the SSARR could be clearly stated on the spreadsheet. Modeling for special forecasts could be done on request. Regular updated histograms of water volumes and availability could be added.

ACTION: The following actions should be completed in preparation for the January meetings.

- All members that are concerned about how their participation in cooperative operations planning could compromise their legal position in a future suit should check with their legal counsel about collaborative processes.
- Rudd will look in to getting the assumptions that go into the spreadsheet made explicit.
- Rudd will check on what proprietary information the COE is able to provide.
- All members should continue to think about moving to some form of joint decision making and make note of their questions, concerns, and needs for discussion.

Next Meeting and Agenda

The next meeting is **December 12th, 1-4 p.m.** and will be in-person at the COE.

Agenda:

- Update on power system reliability needs and impacts on operations
- Presentation by Paul Hoffarth on the Hanford Reach Stranding Study
- Presentation by Billy Connor on Snake River Fall Chinook, 2000
- Consensus decision making

Meeting Minutes

I. Greeting and Introductions

The November 29 Technical Management Team meeting, held at the Customs House in Portland, Oregon, was chaired by Rudd Turner of the Corps and facilitated by Trish McCarty. 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 Turner at 503/808-3945.

McCarty welcomed everyone to the meeting, then led a round of introductions and a review of the agenda.

2. Review of Minutes from November 15 TMT Meeting.

The group did not review the just-completed notes from the last TMT meeting; Turner asked that any changes be submitted to him by close of business Friday, December 1.

3. Review of Current System Conditions.

Turner reported that system conditions are essentially unchanged since last meeting; both precipitation and runoff are lower than normal for this time of year. Bonneville outflow continues to be in the 130 Kcfs-135 Kcfs range, with emphasis on daytime hours, Turner said. We sent out a teletype saying that reverse load factoring is allowed, he said, with higher flows at night in an effort to limit the streambed elevation at which fish are spawning. Pat McGrane added that Grand Coulee is drafting slowly; current elevation at that project is 1278 feet. Hungry Horse is operating to produce an average flow of 3.5 Kcfs at Columbia Falls. The objective is to reach elevation 1270 at Grand Coulee by December 31? Jim Nielsen asked. McGrane replied that Reclamation is in the process of re-thinking that objective, because of a recent increase in Arrow discharge.

4. New System Operational Requests.

On November 21, the Corps received SOR 2000-34, covering flows at Ives Island. This SOR, supported by ODFW, USFWS and WDFW, requests the following specific operation:

- Immediately increase flow at Bonneville Dam to a minimum of 150 Kcfs as requested in SOR 2000-33.

Nielsen went briefly through the contents of this SOR; please refer to the full text (available via the TMT website) for details.

Turner said that given the situation at Arrow, the Corps is monitoring the lower river flow situation closely, and is considering the possibility of increasing Bonneville discharge to the 140 Kcfs-145 Kcfs range beginning next week. The Treaty Storage Regulation we received last week from the Canadian operators has really made us stop and think, said Turner; while it appears, in the short term, that we'll have plenty of water in December, the longer-term prognosis is less certain. Robyn MacKay explained that, somewhat paradoxically, the most recent TSR means that, because of the current low flow and precipitation conditions in the system, the Canadian projects are drafting more deeply than they would typically do at this time of year. That being the case, she said, now might be the time to increase lower river flow. How much additional will Arrow be releasing? Kyle Martin asked. Between 12 Kcfs and 15 Kcfs, MacKay replied.

Essentially, we have greater draft rights than expected at the Canadian projects during the month of December, MacKay said; the decision we need to make is whether to store that water or pass it through. Our inclination at this point is to pass it down through the system, said MacKay. With respect to where Grand Coulee elevation will be at the end of December, said McGrane, we're not sure at this point – our inclination, at this point, given this additional 15 Kcfs in flow from Arrow, is to release an additional 10 Kcfs from Grand Coulee and store the other 5 Kcfs. The tribes would prefer that Reclamation store all of the additional volume from Arrow in Grand Coulee, Kyle Martin said.

If we release 10 Kcfs additional and store 5 Kcfs, it looks as though Grand Coulee will end December at just above 1270 feet, MacKay said. A new Available Energy Regulation (AER) will be issued in two weeks, she said; given the near-term weather forecast, we don't expect that AER to be significantly different from the one we just received. Again, she said, BPA's recommendation, at this point, would be to increase Grand Coulee outflow by 10 Kcfs, raising flows at Bonneville to the 140 Kcfs-145 Kcfs range, and store the additional 5 Kcfs from Arrow.

Turner said the SSARR run has been re-done to reflect the Corps' understanding of the Arrow operation in December; it looks as though flows at Bonneville will be in the 150 Kcfs-160 Kcfs range during December, and closer to 150 Kcfs-155 Kcfs in January. That assumes normal precipitation, Turner said; our concern is that, despite the predictions that this will be a normal runoff year, precipitation has been well below average since June. According to the River Forecast Center, total precipitation is only 40%-60% of normal for the month of November, Martin noted.

Basically, while the Corps is not opposed to the operation Bonneville is proposing, we're still evaluating this situation, Turner said. What we would like to avoid is a situation where flows increase, the fish spawn higher up on the bank, and then we have to decrease flows later, possibly after responding to a power system emergency, resulting in dewatered redds. Basically, the Corps isn't prepared to make a decision on next week's operation until we've completed further analysis, Turner said.

Nielsen noted that problems are occurring for chum at the current flow level, and reiterated that the salmon managers would like to see flows of 150 Kcfs at Bonneville, beginning immediately. I'm not sure what more I can add to what I said previously, Turner said; given the fact that the system simply isn't producing normal precipitation, the Corps is not comfortable with increasing Bonneville outflow to 150 Kcfs at this time. Perhaps we could characterize BPA's proposal as the proposed operation for next week, unless compelling reasons are discovered for not increasing flows to 140 Kcfs-145 Kcfs, MacKay suggested.

Nielsen noted that, given the fact that extremely low flows are limiting spawner access to the tributaries, mainstem spawning is particularly critical to the chum this year; for that reason, it is particularly important to strike a balance between making the maximum amount of spawning habitat available to these fish and not increasing flows too much, so that redds higher up on the bank will be dewatered later.

The group spent a few minutes discussing the influence of tides and Willamette flows on river elevations at the spawning area; Turner said the Corps will look both at Bonneville tailwater elevations and Willamette project discharges to see what might be possible, in terms of counteracting the tidal effects next week. After a few minutes of additional discussion, Turner reiterated that the Corps is still evaluating the risks associated with increasing Bonneville flows at this point in the season. We think this is an important decision, he said, because if we increase flows now, we will lose our ability to reduce Bonneville flows to the 125 Kcfs minimum later in the winter without dewatering established redds. This could happen in the case of continued lower-than-normal precipitation or a power system emergency.

If the request cannot be implemented, said Nielsen, we are asking that the operating agencies provide a written explanation as to why. I prepared an email to that effect, Turner replied; we're hoping that this email, plus the minutes from today's meeting, will suffice. We are actively considering an increase in flow; and are trying to strike a balance between being overly conservative and taking an unacceptable risk, he explained. Does the email constitute a response from Reclamation and Bonneville as well? Nielsen asked. Yes, Turner replied, it was prepared after coordination among the action agencies. After a few minutes of additional discussion, Nielsen said the email and the meeting minutes would comprise an adequate written response to this SOR.

The group devoted a few minutes' discussion to the information on which the Corps will base its decision; Turner explained that the Corps is attempting to avoid any degradation to refill probability next spring, as well as what flow level is sustainable, in order to avoid dewatering redds later in the season. It all boils down to, how lucky do you feel? MacKay observed – to us, 140 Kcfs-145 Kcfs seems to be a prudent range, although it is by no means risk-free. Going to 150 Kcfs, however, gets BPA out of its comfort range. In response to a question, McGrane said Reclamation's position is that, while BPA's proposed operation appears reasonable on the surface, Reclamation has not yet had an opportunity to do a detailed analysis of the proposal and the Arrow operation. In response to another question, Turner said the Corps should be able to make a decision on this issue in the next day or two; he said he will notify the TMT of the action agency decision via email.

Nielsen noted that 51 adult chum samples have been taken for genetic analysis so far this year. He added that it now looks as though WDFW will be able to collect about 300,000 eggs from Greys River spawners this year, less than the target of 400,000 but more than the 200,000 taken last year. Yoshinaka added that USFWS personnel have been radio-tagging adult chum in the mainstem, so there may be some additional fish movement information available soon.

5. Recommended Operations.

Recommended operations were covered during the previous agenda item.

6. Continued Post-Season Review.

McCarty said that, at the last TMT meeting, a number of ideas were put on the table; there was also a sense that the TMT's workload is going to increase substantially in 2001. The group spent a few minutes discussing the TMT's meeting schedule for the 2001 in-season management period; after a brief debate, there was general agreement to move to an every-other-week face-to-face meeting schedule, with conference calls on an as-needed basis, as suggested at the November 15 meeting. The group also discussed on which day of the week the TMT meetings should be held; Turner suggested that, given the group's improved information flow capabilities, it might be possible to meet earlier in the week, perhaps on Tuesday afternoon, in effect combining the FPAC and TMT meetings in order to facilitate timely decision-making. Chuck Tracy said it would probably still be necessary for the salmon managers to meet separately to develop its recommended operations. Paul Wagner said it may be possible for FPAC to meet Tuesday morning. Basically what I'm saying is that it may be

time for the TMT to think about doing business in a somewhat different way than it has in the past, Turner said; we don't have to make a decision today, but it is something I would like you to think about.

You're saying two things, said McCarty – you would like to do away with the "us vs. them" mentality, and jointly develop recommended operations; also, you would like to streamline the process as much as possible, so that it isn't such a time-eater. I guess my thought is that many of the operations that are being requested in the SORs are already called for in the Biological Opinion, Turner replied.

A discussion of the TMT process ensued, focused primarily on the role and function of SORs, what constitutes acceptance of a recommended operation, and what constitutes consensus. Turner observed that, from the Corps' perspective, the problem with some SORs is that they essentially tell the action agencies how to operate the system, prior to the TMT's discussion of what is actually feasible, from a system standpoint.

The discussion then returned to the question of which day of the week the TMT meetings should be held; the group also discussed the potential development of a more useful tool than the weekly SSARR-based flow spreadsheet on which to base the TMT's operational decision-making. Turner observed that a spreadsheet that predicts flows to within a tenth of a Kcfs up to a couple of months in advance may not be the best tool for the TMT to be using. The group discussed the feasibility of adding a range of precipitation and temperature assumptions to the current SSARR format; there was general agreement that this would be useful. Turner said this could be done but should be limited to an as-needed basis.

The basic problem with the current spreadsheet, from the Corps' perspective, is that it can mislead people, Turner said – despite the fact that it is a prediction only, sometimes it seems as though people develop expectations that a certain very specific flow will materialize in a given week at, say, McNary, and that isn't necessarily realistic.

Last meeting, we talked about inviting a representative from the River Forecast Center to attend a future TMT meeting to discuss the implications of switching to a higher probability of refill, Turner said – is there still interest in having that take place? There was general agreement that this would be useful.

Donna Silverberg summarized the discussion so far by saying that there appears to be TMT agreement that, in 2001, face-to-face meetings will be held every other week, with conference calls in between; the meeting date will change from Thursday morning to Wednesday afternoon; that the TMT participants will think about moving beyond the SOR-based us vs. them approach to a joint decision-making model, and whether or not that might compromise individual agencies' later legal position. I didn't hear anything about additional information needs, she said, with the possible exception of adding a range of weather assumptions to the SSARR. Nielsen noted that it might be helpful to have information about some of the non-federal projects included in the SSARR; Turner replied that this might entail some problems with the release of proprietary or sensitive information. The final thing I have heard is that the RFC will be asked to attend a future meeting to discuss refill probability and possible spreadsheet improvements, Silverberg said. I'll make sure that happens, Turner said.

7. Discussion of the TMT's Need for Additional Information or Training.

Turner noted that these are carry-over items from last meeting; he asked whether the group is still interested in having presentations from the RFC on refill probability and from BPA on winter power system reliability concerns. Given the fact that this would bring us up to five presentations at the December 12 meeting, said Turner, does the group still see a need for all of them? There was general agreement that only Billy Connor's fall chinook report and Paul Hoffarth's Hanford Reach stranding report will be scheduled for next meeting.

8. Other.

A. Reports for Next Meeting. This topic was addressed during the previous agenda item.

B. Chinook Run Size Projection. Nielsen noted that the Technical Advisory Committee's projections of the 2001 chinook run sizes are now available; the actual upriver spring chinook run (counted at the mouth of the Columbia) was 178,600 last year, and is projected to be 364,600 in 2001. The Snake River wild chinook run went from an actual return of 12,400 in 2000 to a prediction of 39,300 in 2001. The Snake River summer chinook run size is estimated at 24,500 fish for 2001, down from an actual count of 30,700 in 2000.

C. Public Comment. Richelle Harding (D. Rohr and Associates) stated that, while the Mid-Columbia PUDs don't necessarily have to have SORs, they do want to know the process to keep the public informed as system operations are developed through TMT.

9. Next TMT Meeting Date.

The next meeting of the Technical Management Team was set for Tuesday, December 12, 1 – 4 P.M. The next meeting after that was set for Wednesday, January 10, 1 – 4 P.M. Meeting notes prepared by Jeff Kuechle, BPA contractor.

TMT PARTICIPANT LIST

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On Phone:

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TECHNICAL MANAGEMENT TEAM

MEETING NOTES

December 7, 2000

CORPS OF ENGINEERS NORTHWESTERN DIVISION OFFICES – CUSTOM HOUSE
PORTLAND, OREGON

TMT Internet Homepage: <http://www.nwd-wc.usace.army.mil/tmt/>

DRAFT

1. Greetings and Introductions.

Cindy Henriksen welcomed everyone to today's conference call, convened December 7, 2000 to discuss a potential winter cold snap operation next week. The conference call was facilitated by Trish McCarty.

2. Discussion of Potential Winter Cold Snap Operation.

Robyn MacKay recapped current system conditions; she said that based on the most recent weather forecast information, by Monday morning, BPA is expecting temperature departures of minus-18 degrees, by Tuesday, minus-19 degrees, by Wednesday, minus- 20 degrees. We expect to see a little relief by the end of the week, she said, with temperatures creeping up to about minus-16 degrees by Friday.

The bottom line is, we won't be able to meet load without exceeding current Bonneville flows and increasing discharge and generation at the headwater projects, said MacKay. Bonneville recognizes we have a problem on federal system; we will declare a power system emergency tomorrow morning, she said. One of the things that means is that we will need to have all available units primed, up and ready to run by first thing Monday morning. MacKay added that Bonneville plans to scale down the planned emergency operation to meet federal load only if the region decides it doesn't have a problem in meeting its load; so far, the regional emergency team has declined to declare that an emergency is imminent. However, if the regional emergency team does decide to declare an emergency following its meeting tomorrow, Bonneville will support the region in meeting other utility load in the Northwest, MacKay said. She added that she has every reason to believe that the region will declare an emergency tomorrow; the only reason they haven't done so yet is, in my opinion, because of marketing strategies.

Expected day-average flows at Bonneville will be in what range? Paul Wagner asked. About 180 Kcfs if we're only meeting federal load, and closer to 210 Kcfs if we're meeting regional load, MacKay replied – we plan to load-factor to whatever extent we can.

In response to a question from Nielsen, MacKay said that once Bonneville declares an emergency, all headwater

projects will be primed and ready to run at full turbine capacity as of Monday morning. As soon as the emergency has passed, she said, we will back them down from that operation as soon as possible. What do you mean by primed and ready to go? Wagner asked. All available units will be scheduled and running first thing Monday morning, because there is some ramp-up time involved, MacKay replied. Does that mean Bonneville intends to run all three units at Dworshak? Steve Pettit asked. Yes, MacKay replied.

Henriksen noted that the alert that was sent out was based on the December 5 forecast; the most recent forecast looks more severe. In response to a question from Pettit, she said the current elevation at Dworshak is 1518.9 feet. Pettit observed that a two-week use of Dworshak at 10 Kcfs will severely exacerbate the refill problem; Henriksen agreed. How likely is it that, in Mid-January, there will be another call to increase discharge at Dworshak, and will having drafted the pool lower in December make that less likely? Pettit asked. At this point, I have no idea, MacKay replied. Our department is very concerned about the impact of this operation on spring flow augmentation, said Pettit; we would prefer that you exhaust all other options before you begin drafting Dworshak. MacKay replied that numerous other actions have already been taken.

The best guess we have at this point is that 2001 is going to be a normal water year, Henriksen added. The Corps' feeling is that we should be able to increase Dworshak flow for a few days now without seriously compromising our chances of achieving the April 10 flood control refill probability at Dworshak. Pettit said Dworshak snowpack is currently only 20% of average. Henriksen replied that the Corps still feels that it is possible that Dworshak will meet its refill target this year, although the Corps does share IDFG's concerns. And the Corps will send out warnings of increased flows in the Clearwater well in advance? Pettit asked, adding that there is currently a large concentration of anglers on the North Fork of the Clearwater. Flow conditions in the Clearwater are now very low, he said, so the fishermen need to be warned that flows will be on the rise. The Corps will take care of that, Henriksen said.

What about the latest list of prioritized emergency actions, Jim Litchfield asked – have we gone through it and done everything else we can? From the power side, yes, MacKay replied – Bonneville is purchasing all available power, getting all available units up and running, and has taken a number of other actions – we're now down to reservoir actions. She added that BPA will issue a regional plea for energy conservation along with tomorrow's declaration of the emergency. We're also going to increase Willamette generation, Henriksen said. Have you purchased all available power? Litchfield asked. Yes, MacKay replied – we're not finding an energy market out there at this time. Henriksen noted that a winter emergency is very different from the type of summer emergency for which the emergency actions list was developed.

So you feel both regional and federal emergencies are likely to be declared? Christine Mallette asked. The regional emergency team met yesterday; again, they decided against declaring an emergency at that time, MacKay replied. That group will re-convene tomorrow, MacKay said; Bonneville is going to declare a federal emergency tomorrow, and my guess is that the region, given the new temperature forecast, will follow suit.

In response to a question from Wagner, MacKay said Bonneville played their cards at yesterday's regional emergency team meeting; BPA said they believe it will be necessary to take extraordinary actions to meet load. The other parties at that meeting didn't feel it was necessary to declare an emergency at that time, said MacKay. If no regional emergency is declared, Bonneville will take only the steps necessary to meet its load. In response to a question from Jim Nielsen, Henriksen said the TMT went through a winter cold snap operation in December 1998; the TMT's cold snap procedures are available via the TMT website.

What will happen at Libby and Hungry Horse? Litchfield asked. As Robyn said, BPA would like to have all headwater projects up and running by Monday morning, Henriksen replied; we're planning to increase flows at Libby to as much as full powerhouse discharge. Again, assuming normal runoff, the Corps believes we can run at that level for a few days without compromising refill probability later in the season, she said. But if the cold snap continues longer, that could be a problem? Litchfield asked. Correct, Henriksen replied.

MacKay said her expectation is that the cold snap is going to last through the week – Monday through Friday. MacKay added that Hungry Horse will also increase discharge to full powerhouse capacity; that project is currently at 3524, and will be one of the first to back down once the emergency has passed.

What about your plans for keeping people informed? McCarty asked. We have a face-to-face TMT meeting scheduled for December 12; that would be a logical time to do an update, MacKay replied. My goal is to have the emergency operation in place for Monday morning when we leave today's meeting, MacKay said; we could also provide an update on Tuesday, if the group feels that would be useful. Once we're beyond the cold snap operation, what will be the new operation? Nielsen asked. Our expectation is that this operation will not set a new Ives Island chum spawning protection level, if that's your question, MacKay replied. That was my question, yes, Nielsen replied. In response to a request from Scott Bettin, Christine Mallette said ODFW will provide Bonneville with current monitoring numbers from Ives Island.

Nielsen said that, currently, federal operators are targeting a flow of 135-140 Kcfs below Bonneville to keep spawning at Ives Island below that stream level. If you increase flows to this extent, you will open up 50% more habitat, and spawning will take place in areas that will be dewatered later. That is our concern, particularly if daytime flows are higher, Marv Yoshinaka said – if this had happened in January, it wouldn't be as much of a concern, but there are still a large number of spawners in that area. Bettin said BPA will try to keep flows down as low as possible during the day through Monday. He noted that the available habitat is all watered up at about 160 Kcfs in flow, so there will be little point in trying to keep flows below that level once the emergency operations begin.

Litchfield noted that California has declared a Stage 2 emergency, and asked whether there is any chance BPA will be asked to help them. It doesn't look like BPA will have any additional energy to send them during peak hours while this emergency is going on – I don't think we will be sending energy or receiving energy from California during this emergency, MacKay replied.

What's the difference between a regional and a federal power system emergency? Margaret Filardo asked. The other utilities, some of which are not served by Bonneville, have so far declined to declare an emergency, Litchfield said. At yesterday's emergency call, said MacKay, the other utilities in the region claimed they could get through a minus-20 emergency just fine. That is inconsistent with what history shows and what Bonneville believes, she said; we are telling the region that we will only meet our own load unless the other regional utilities declare an emergency. There is another regional emergency team meeting tomorrow. And if the region does declare an emergency tomorrow, BPA will be prepared to meet that load? McCarty asked. Yes, MacKay replied – I want to make sure Bonneville is ready to meet whatever occurs on Monday by the time I leave the office tomorrow. Again, the actions won't begin until Monday morning, MacKay said, unless temperatures come in colder, sooner. Libby will have to start ramping up over the weekend, because of restrictions on ramping rates at that project, Cathy Hlebechuk added.

In response to another question, MacKay said that, by Wednesday, actual temperatures in Spokane are expected to be -13 at night and 7 degrees during the day.

Henriksen noted that, at BPA's request, the Corps has begun removing the screens at McNary as part of this operation; Unit 1 is unscreened now, and the Corps will continue to unscreened units through the weekend. This is about a week earlier than normal timing, she said; the screens will be reinstalled next spring.

In response to another question, MacKay said Bonneville does expect to be able to meet load next week, given the actions we're taking. For every 10 degrees of temperature departure, load typically increases by 1,000 aMW, she added. Another participant asked, Once flows moderate, which of the emergency actions that affect fish will be stopped first? The headwater projects will reduce discharge, and flows at Bonneville will begin to recede, MacKay replied; beyond that, we don't have an exact list at this time.

We haven't really talked about Grand Coulee operations at this point, Henriksen said; Lori Postlethwaite replied that the Grand Coulee draft rate will likely increase to up to 2 feet per day. Postlethwaite added that Reclamation's main concern is that it will not be possible to maintain these higher flows below Bonneville for the rest of the year. Nielsen said that is the salmon managers' concern as well, because redds will be established higher up on the bank. Henriksen requested that WDFW and USFWS increase the intensity of their monitoring of the Ives Island spawning area once the cold snap operation begins; Nielsen said he will see whether that will be possible. Yoshinaka said crews have had a hard time getting out lately, because of already-severe weather conditions.

With that, the conference call was adjourned. Notes prepared by Jeff Kuechle, BPA contractor.

COLUMBIA RIVER REGIONAL FORUM

TECHNICAL MANAGEMENT TEAM

MEETING NOTES

December 12, 2000

CORPS OF ENGINEERS NORTHWESTERN DIVISION OFFICES – CUSTOM HOUSE PORTLAND, OREGON

TMT Internet Homepage: <http://www.nwd-wc.usace.army.mil/tmt/>

DRAFT

FACILITATOR'S NOTES ON FUTURE ACTIONS

Facilitators: Donna Silverberg, Patricia McCarty

The following is a list of items the Technical Management Team (TMT) discussed at its last meeting that may require future action or discussion.

Current system conditions:

Status of power system operation for cold snap: Scott Bettin reported that a warning of a stage 2 alert was issued on Friday, because of the expected low temperatures. The emergency warning was rescinded by 10 a.m. December 12th.

Reservoir operation: The COE and BOR reported on the project operations during the emergency, and operations now that the emergency has ended. Rudd noted that the screens were pulled at McNary, and the dewatering of the juvenile bypass system at McNary will be completed this week. Also, the juvenile fish facilities on the Lower Snake were dewatered last week because of cold weather.

Fish migration: The observation of chum from this morning, the 12th, was 61 live, with 3 in the Ives Island backwater. The number of incoming fish appears to be declining. The salmon managers stated that they are still concerned about the effect of low flows and fluctuations in Bonneville tailwater elevation.

ACTION: Christine Mallette will send the chum monitoring information to Fish Passage Center for the information to be posted on the FPC web page.

System Operation Requests:

2000-35 and 2000-36: Marv Yoshinaka reviewed the requests and the group discussed the change in conditions since 2000-36 was drafted. The salmon managers and the action agencies both have concerns about the low precipitation and the potential of not meeting the spring refill levels if Bonneville flows were to be raised to and stay at 150+ kcfs. The action agencies said that based on their information the flows at Bonneville needed to stay at 135-140 kcfs through the winter, with higher night time flows possible, to maintain a high refill probability. The Bonneville tailwater elevation has been at about 12 feet since December 7th, and the planned flow should maintain that level. The salmon managers acknowledged this as the planned operation, and as a response to both SORs.

Report on Fall Chinook Stranding:

Paul Hoffarth (WDFW) described the findings from the stranding and entrapment study done below Priest Rapids dam. Generally, stranding and entrapment occurs when the dam is ramping down. The mortality of those stranded or entrapped is high, with the highest mortality occurring within specific flow ranges. The number of fish lost from stranding and entrapment in 2000 was about one-half the number lost in 1999. The researchers will look at flattening

out fluctuations in flow as one option to further reduce stranding and entrapment. There does appear to be a relationship between stranding and night time fluctuations.

Report on 2000 Snake River Fall Chinook Migration Study:

Billy Connor (USFWS) described the results from his study looking at the effect of flow augmentation on survival of juvenile fall chinook. His results indicate that “summer flow augmentation provided modest survival gains”, approximately 8.7%.

TMT needs for additional information and training:

Refill probabilities: Members agreed that they need a better understanding of how the reservoir refill probabilities are developed, and of the information used to develop the projections.

ACTION: Paul Wagner and Rudd Turner will share the databases and the process used in developing the SSARR with all members.

ACTION: Rudd Turner will arrange for the River Forecast Center to come to the TMT meeting on January 10th, 2001, to explain the forecasts, the development of the projections, and how TMT can translate the forecasts into water management decisions.

Power system: The group agreed on the need to schedule a presentation in February on the power system to understand reliability issues, constraints, and what can and might happen in the upcoming year.

Fish information:

ACTION: Jim Nielsen will ask the Fish Passage Center to provide their fish-o-graphs for this coming year's migration season.

Next Meeting and Agenda

The next meeting is **January 10th, 2001, 1-4 p.m.** and will be in-person at the COE.

Agenda:

- Presentation by River Forecast Center
- Comments on the 2000 Water Management Plan

Continuation of discussion

Meeting Minutes

1. Greeting and Introductions

The December 12, 2000 Technical Management Team meeting, held at the Customs House in Portland, Oregon, was chaired by Rudd Turner of the Corps and facilitated by Donna Silverberg and Patricia McCarty. 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 Turner at 503/808-3935.

Silverberg welcomed everyone to the meeting, then led a round of introductions.

2. Review of Current System Conditions.

Scott Bettin provided an overview of current power system conditions, noting that it has been cold, but not as bitterly cold as forecast, for the last two days. The result was a Warning Class 2, which means the potential exists for power system problems, Bettin said. The Governors of Oregon and Washington issued a plea for conservation on Friday, he said; as of 10 a.m. this morning, we have canceled the Stage 2 warning, and the system is now back to normal operations. Bettin added that, through the weekend, Bonneville outflows were maintained at about 140 Kcfs during the day and slightly higher at night.

Was there any observed decrease in load as a result of the plea for conservation? Paul Wagner asked. Yes, Bettin replied – businesses and schools shut down, and there was a measurable decrease in load. EWEB reported a 4% load decrease as a result of conservation measures taken by customers. The bottom line is that, as long as the weather continues to be warmer than forecast, we should be OK, Bettin said.

In terms of operations at the Corps projects in response to the Stage 2 warning, said Turner, at Albeni Falls, COE filled slightly, and is now withdrawing that water. Dworshak outflow has been ramping up, and was up to 10.7 Kcfs as of 9 a.m. this morning, Turner said; at this time Dworshak is ramping back down to minimum outflow. We plan to stay at minimum outflow from Dworshak for at least the next couple of days, Turner said. Steve Pettit noted that fluctuating flows have a very detrimental effect on steelhead fishing below that project, so he is glad to hear this.

At Libby, said Turner, we ramped up outflow to reach 26.9 Kcfs discharge yesterday, then ramped down to 17 Kcfs outflow last night. We plan to release up to 26 Kcfs from Libby until 3 p.m. today, then ramp down to 17 Kcfs by midnight, Turner said, with no power peaking at that project tomorrow.

As we reported at last week's meeting, the fish screens have been pulled at McNary, said Turner; the biologists will also be completing the dewatering of the juvenile bypass system at that project. Also in response to the potential emergency, the Corps delayed annual maintenance tasks at several projects, said Turner. On the Lower Snake, juvenile fish facilities were unwatered on Wednesday and Thursday of last week. We surcharged the pools slightly at Lower Monumental, Little Goose and Lower Granite, and increased generation at the Willamette projects as well, Turner said. Again, average flows at Bonneville have been in the 140 Kcfs range, he said; with temperatures moderating, you can expect to see flows in the 135 Kcfs-140 Kcfs range for the foreseeable future.

Lori Postlethwaite said that, during the potential emergency, only three units were operating at Hungry Horse; we're now back down to Columbia Falls minimum flow at that project, she said, adding that current Grand Coulee elevation is about 1272 feet.

Why didn't Grand Coulee respond more? Wagner asked. Outflow peaked at over 200 Kcfs at Grand Coulee, but it didn't draft the project much, Postlethwaite replied. And did the five feet get put back into Banks Lake? Jim Nielsen asked. Yes, Bettin replied.

What about the status of the fish migration? Silverberg asked. There aren't a lot of fish currently in the river, Wagner replied; chum spawning is the main activity at the moment. We'll be getting a report from the field crews later in today's meeting, said Marv Yoshinaka. Christine Mallette said crews were out this morning looking for spawning activity; visibility was very poor, but they found 61 live chum, three found in the backwater area. It didn't appear that there were many new fish, and most of the fish had been there awhile. Flows appeared to be lower than they were on the previous evening. The overall number of fish moving into the area appears to be declining, despite the fact that we would expect to see fish moving into the area for the next two weeks or so, Mallette said.

Yoshinaka said that last week, the USFWS sampling crews saw redds in very shallow spawning areas – fish with their backs out of water, redds covered by only an inch or so of water. The power emergency and its increased flows helped ease those concerns somewhat, Yoshinaka said. Turner noted that Bonneville tailwater elevations have been in the 12.1-12.5 foot range in the past several days, with daytime flows of about 140 Kcfs.

The action agencies continue to be concerned about low precipitation and runoff conditions over the past several months in the basin, said Turner; while there are forecasts that say we will be returning to normal precipitation, we're concerned because, here of late, those forecasts simply haven't materialized. The Corps feels that 135 Kcfs-140 Kcfs outflow from Bonneville is a prudent operation, at this point, in terms of something we can maintain through the winter, Turner said, adding that the Corps is attempting to maintain an 85% refill probability at Grand Coulee. There is about a 70% chance of being able to maintain an average flow of 130 Kcfs through the winter, Bettin added. If we increase Bonneville flow to 150 Kcfs, he said, that will greatly reduce the probability of meeting the Grand Coulee refill target. Precipitation will need to be above average for the rest of the winter if we are even to get back to a normal precipitation curve for the year, Postlethwaite said.

Turner added that some limited load factoring may be necessary to maintain the 130 Kcfs daytime flow at Bonneville.

3. New System Operational Requests.

On December 4, the Corps received SOR 2000-35, covering Bonneville Dam tailwater elevation. This SOR, supported by ODFW, USFWS, WDFW and NMFS, requests the following specific operations:

- Maintain a minimum tailwater elevation of 12 feet at Bonneville Dam.

On December 5, the Corps also received SOR 2000-36, covering Bonneville operations for Ives/Pierce Island. This SOR, supported by ODFW, USFWS, and WDFW, requests the following specific operations:

- Manage the hydrosystem operation flows, which the federal operators have predicted to range from 150 Kcfs to 160 Kcfs throughout the month of December, to benefit spawning, incubation and rearing of lower river chum salmon to the maximum extent possible.
- These operations will effectively determine new minimum spawning, and incubation and rearing operations for the remainder of the 2000-2001 season.
- Operate Bonneville Dam to provide a stable minimum flow condition below the dam for the Ives/Pierce Island chum salmon spawning area.
- Maintain consistent day to nighttime flows, avoiding reverse load factoring at Bonneville Dam.
- Maintain a minimum tailwater elevation during predicted periods of low tides and low Vancouver Gauge elevations to avoid deterioration of spawning and incubation and reduction of Gauge 1 and 2 elevations at the Ives/Pierce Island complex. In addition to the streamflows recommended above, the following minimum tailwater elevations should be maintained:
 - Flow: 150 Kcfs – Tailwater: 13.5 feet
 - Flow: 155 Kcfs – Tailwater: 14 feet
 - Flow: 160 Kcfs – Tailwater: 14.5 feet
- Avoid reverse load factoring at Bonneville Dam, using water to maintain minimum tailwater elevations when necessary.

Yoshinaka spent a few minutes going through the details of these SORs, the full text of which is available on the TMT website. He noted that the requested flow level in SOR 2000-36 were based on the most recent SSARR run; in response to a question, he said the salmon managers did not evaluate the effects of the requested operation on refill probabilities this spring.

Do the facts reported today change this SOR? Silverberg asked. We continue to be concerned about fluctuating flows, said Mallette; we would like to use that water to maintain higher tailwater elevations when necessary. This SOR was based on the anticipation of higher flows, said Nielsen; the concern was that redds would be established above the 130 Kcfs-140 Kcfs flow level. That concern has now gone away, he said; our concern is maintaining stable flow and tailwater elevations to support the current spawning. We would recommend higher flows, somewhere in the 155 Kcfs-160 Kcfs range, to optimize spawning conditions, Yoshinaka said. How many fish do we have this year? Bettin asked. I don't know, Yoshinaka replied – not many fish have entered Hamilton Creek. The last estimate we had was about 300 redds in the mainstem, in the Hamilton/Ives Island area, he said.

In response to a question, Bettin said Bonneville flows will likely be about 140 Kcfs during daytime hours, with higher flows at night and tailwater elevations of 12-12.5 feet at Bonneville. In response to another question, Nielsen said it wouldn't be unusual to see another influx of chum spawners this week or next. Mallette reiterated that ODFW would prefer to see the increase in nighttime flow minimized, with higher flows during the day, instead, in order to maximize the amount of available habitat. The risk, of course, is dewatering that habitat if we can't maintain the higher flow level, Bettin said. February flows are the main concern, Postlethwaite added.

Turner observed that, under the 2000 BiOp, the priority is clearly on Grand Coulee refill. While the operation requested in SOR 2000-36 would benefit chum spawners this winter, he said, we don't want to jeopardize the spring flow augmentation program for juvenile migrants. Again, so far this fall, precipitation has been well below normal,

hence this disagreement; potentially, even the difference between 130 Kcfs and 135 Kcfs may be significant, in terms of meeting the April 10 flood control elevation at Grand Coulee, Turner said. Even if we see increased precipitation over the next two weeks, as predicted, that won't make up for the shortfall – the Canadian basin snowpack is only 50% of normal for this time of year. The Western Montana snowpack is only 30% of normal – the third-lowest on record, said Postlethwaite.

Given that fact, does it still make sense to try to hit the December flood control draft point at Libby? Jim Litchfield asked. That's a fixed point, Bettin replied. We probably wouldn't want to move very far from that 2411 elevation, if at all, said Turner – even if runoff is below normal from that point, that elevation still provides a good chance to refill the project. Perhaps there is an opportunity to round the corner at Libby this year, said Litchfield. Once we have a runoff forecast, we can at least discuss that, Turner replied.

We would like to protect the chum as best we can, recognizing that this has been a difficult year so far, said Yoshinaka. The chum are confined to the mainstem; there hasn't been much spawning in the tributaries to date, because of low tributary flows. We share the Corps' concerns about refill, however, Yoshinaka said; we will want to see good flows for spring and summer migrants, and would like the reservoirs full, if possible.

Are you in agreement that refill should take precedence over flows for chum spawning? Silverberg asked. We wouldn't advocate an operation that will seriously compromise spring and summer flow augmentation, Nielsen replied; that is certainly important to us, but I don't see this as an either/or situation. I also share the concern about meeting our spring/summer flow augmentation goals, said Mallette; I would like to work more closely with the operating agencies to determine the flow levels that are possible at this time. Is that something we can do today? Silverberg asked. As part of the BiOp analysis, NMFS looked at the 50-year record and the probability of meeting the various flow augmentation levels, Wagner replied; not surprisingly, there is considerable variability in that 50-year record. What the record does show, however, is that Bonneville has been able to maintain 150 Kcfs average flow during the winter months in only 11 of 50 years; if you go down to 145 Kcfs, that goes up to 28 years out of 50. So far, said Wagner, NMFS has been more willing to side with the action agencies, and err on the side of refill probability. However, it is a very tough decision, said Wagner – the bottom line is, we won't know what kind of a water year this is going to be until closer to April.

So what happens with SOR 2000-36, given the higher-than-expected temperatures and lower-than-expected flows? Silverberg asked. Certainly redds were not established at the higher level, Nielsen replied; still, we did recommend higher flows at the previous TMT meeting. Is 140 Kcfs acceptable, given everything we've seen today? Silverberg asked. No, Mallette replied – I would like to review the current system data, target elevations and other information before we agree to a flow level. Is that information you can continue to share over the next week or so? McCarty asked. I'll share the 50-year run information, Wagner replied. That's useful information, said Litchfield, but no two years are exactly alike. At this point, it is somewhat intuitive – it could rain like crazy between now and April, or it could continue to be drier than average. We need to make a conscious decision about what constitutes an acceptable level of risk, he said; until we get some additional forecast information about precipitation and snowpack, we're flying blind.

After a few minutes of additional discussion, it was agreed that the salmon managers will discuss this issue further at next Tuesday's FPAC meeting. We've heard that the operators intend to maintain an average flow of 135 Kcfs-140 Kcfs at Bonneville, said Nielsen; what about the minimum tailwater elevation? Tailwater elevation will likely fluctuate upward from 12 feet, but there should be sufficient flow to maintain the 12-foot minimum, Bettin replied. Nielsen said a higher tailwater elevation is acceptable, as long as the 12-foot minimum is maintained. What about Christine's suggestion that the operating agencies shift the higher flows from nighttime to daytime? McCarty asked. BPA isn't willing to take the risk of having to maintain 150 Kcfs out of Bonneville to keep redds established at the higher level watered through the spring, Bettin replied.

Bettin asked whether the information he requested about the number of redds established at various elevations is available; Mallette replied that it will be – the data has been collected, and will be delivered to the Fish Passage Center as soon as it is available. And the Corps and BPA will make data about refill probability and risk for our discussion at FPAC? Mallette asked. Yes, was the reply. It was further agreed that it may be necessary to schedule a TMT meeting for next week to discuss this information. However, the salmon managers preferred to discuss the information among

themselves first rather than call another meeting at this time.

In summarizing NMFS views on the Bonneville operation, Wagner stated that his agency is more comfortable with limiting daytime flows and increasing flows at night, rather than providing higher daytime flows with a flat 24-hour flow, given uncertainty of water supply for next spring. For this reason, NMFS has not objected to the action agency flow strategy thus far this water year. NMFS takes a risk-adverse approach toward the fall/winter operation; they want to see a reasonable degree of certainty that flows can be maintained and refill can occur when agreeing on flow levels to protect chum at Ives/Pierce Islands. Christine Mallette (ODFW) added that this is another reason to receive more detailed information from NMFS and the action agencies on risk levels for making decisions on flows this fall.

4. Recommended Operations.

Recommended operations were summarized during the previous agenda item.

5. Report on Fall Chinook Stranding.

Paul Hoffarth of WDFW briefed the TMT on the preliminary results from the 2000 Hanford Reach fall chinook stranding study. He noted that WDFW is the lead agency for this effort; other participating entities include the USGS and Battelle Northwest Laboratories. He said the main focus of the study is the reach between White Bluffs and Ringold Hatchery.

Hoffarth touched on the effects of Priest Rapids discharge on elevations at Vernita Bar and White Bluffs slough; he noted that the objectives of the stranding study include the following:

- Evaluate the effect of water fluctuations in the Hanford Reach on rearing juvenile fall chinook, resident fish and benthic invertebrates.

Hoffarth touched briefly on the sampling techniques and protocols used in the study, the techniques used to develop the loss estimates in the study, air temperature and departures from normal and Priest Rapids daily discharge in 2000, compared to 1998 and 1999. He went through the main points of the Hanford Reach juvenile fall chinook protection program, then moved on to actual daily Priest Rapids discharges observed in 1998, 1999 and 2000.

Hoffarth then provided information from the random and index sampling of juvenile fall chinook in 2000. He noted that the majority of the mortality in 2000 occurred between mid-April and the end of May, although the researchers did see some mortality spikes during mid-June. He touched on relative abundance over time from the index sampling effort in 2000, the number of fish at risk by flow band (the highest mortality occurred when flows were in the 120 Kcfs-130 Kcfs and 180 Kcfs-190 Kcfs range), average discharge and flow fluctuations over the 2000 season, emergency action criteria. He also described the response of Grant County PUD to the 10 emergencies that occurred in 2000 (2 occasions when flows were not increased, seven occasions when flows were increased but were not sufficient to re-inundate all entrapment areas, one occasion when flows were increased sufficiently to re-inundate the entrapment areas).

The 2000 estimate of chinook at risk for the study area (roughly half the area where stranding could occur) was approximately 420,000 fish, about half the mortality that was seen in 1999, Hoffarth said – in other words, it would appear that the fish protection measures are having a positive effect. In response to a question, Hoffarth said there is no definitive estimate of the total number of emergent Hanford Reach fall chinook by year; Bettin said he has heard estimates in the 40 million-60 million range. Hoffarth said next year's study will attempt to develop an estimate of total fall chinook abundance in the reach.

Hoffarth touched briefly on the study goals for 2001:

- Continue to work with Grant County and other agencies
- Refine flow fluctuation restrictions and determine critical periods

- Continue current level of sampling for in-season monitoring and refine project operations to reduce fish losses
- Further examine data from previous years to aid in determining critical susceptibility components
- Appears to be a relationship between stranding and night fluctuations
- 2001 emergence timing and duration

He added that the estimate is that escapement will be in the range of 30,000-40,000 adult fall chinook in 2001; we should have plenty of fish to work with next year, he said.

Have you talked about filling in some of your repeat entrapment sites? Bettin asked. I don't know whether or not that has been discussed, Hoffarth replied – there are definitely some areas that seem to trap fish year after year. It is ironic that the entrapment site you showed appeared to be an old redd, Bettin observed. Part of the problem is that there are thousands and thousands of entrapment sites, one WDFW participant observed. Still, if you could fill in some of the more notorious repeat offender areas, that would probably help, Bettin said.

In response to a question, Hoffarth said that, due to the behavior of the juvenile fish, nighttime flow fluctuations appear to be more detrimental to the fish than daytime flow fluctuations – during nighttime hours, the fish are basically quiescent, and do not respond effectively to changes in stream elevation. During daytime hours, the fish seem to be better able to follow the actual shoreline as it recedes, Hoffarth said.

6. Report on 2000 Snake River Fall Chinook Migration.

Billy Connor of USFWS briefed the TMT on results from his 2000 fall chinook outmigration monitoring work. He touched first on 1999 fall chinook spawning; he noted that the Snake River fall chinook ESU consists of four stocks. In 1999, there were 373 redds counted in the spawning area. Sampling of the emergent fall chinook takes place from April to July, using beach seines; captured parr are PIT-tagged. His crews tagged a total of 1,209 parr in 1999; 329 of which were later detected at Lower Granite Dam. The median passage date occurred in the third week of June this year, Connor said.

In 2000, Connor said, I estimated survival at 47.5% to the tailrace of Lower Granite Dam for the fish we PIT-tagged in the Snake River; that was down from an estimated survival of about 70% in 1999. He noted that, according to his regression analysis, 88% of the variation in year-to-year survival is accounted for by two variables: flow and water temperature. Increases in flow increase survival, while lower temperatures mean higher survival, Connor explained.

Moving on to the question of whether or not flow augmentation increases survival, Connor said he had used a 12-year data set of actual flows and flow augmentation provided to develop another regression model. The bottom line is that, in 2000, according to this model, for the period of July 1-August 31, without flow augmentation, survival would have been about 39%; with flow augmentation, it was estimated to be 47.8%, an increase of 8.7%. This is probably an under-estimation of the actual benefits of flow augmentation, Connor said, because the fish would have taken longer to pass down through the system without flow augmentation, and I did not factor that into this model. Basically, however, what this model shows is a modest increase in fall chinook survival as a result of the flow augmentation provided in 2000.

The question is, which is more important to survival – flow or temperature? Turner said. In other words, which factor should be more important in our management of the system? That's an excellent question, said Connor; for 2000, with its low flows and relatively cool water temperatures, flow was a more influential variable than temperature on fall chinook survival.

So is it better to be conservative with Dworshak during the spring, to be sure it's full for summer flow augmentation and temperature reduction, or should we use it all through the spring and summer? Litchfield asked. It depends on what you're trying to do, Connor replied – depending on which species or life-history stage you're trying to protect, you're going to get a different answer. Still, if there was a rational way to decide what is the highest and best biological use of the Dworshak water, that would be helpful, Litchfield said.

Is it safe to assume that, if more flow augmentation had been provided during the summer of 2000, there would have been some percentage of increase in survival in response? Wagner asked. Yes, Connor replied.

Do you have any idea what may have caused the 50%+ mortality you saw between the time you tagged the fish in 2000, and their passage at Lower Granite Dam? Mallette asked. In general, the three main factors were likely predation, disease and water temperature-caused delays in smolting, Connor replied.

In response to a question from McCarty, both Connor and Hoffarth said the final 2000 reports on their studies likely will be available in June 2001.

7. Define TMT Needs for Additional Information and Training.

Turner said the Corps would like to begin planning the meetings for this coming winter period, in terms of what needs to be covered by TMT. One item we have discussed in the past is the reservoir refill probability issue, he said; as you will recall, we have had some discussion of changing from a 50% refill probability to something higher, and what the biological consequences of such a change may be. The IT has asked us to look at this issue, said Turner; what we need to know is what kind of information you need in order to explore this question further.

Turner noted that, although there is some flexibility to implement a slightly different flood control operation and “round the corner” in certain years, unless a decision is made at a higher level than TMT, the Corps isn’t going to change its flood control and refill targets. Cindy Henriksen suggested that a presentation on this topic from the River Forecast Center might be helpful. The group spent a few minutes discussing what, exactly, the IT has asked the TMT to do; Litchfield said it is his understanding that the starting-point would be for the Corps to develop a graphic representation of the range of uncertainty associated with various refill probabilities – say, 25%, 50% and 75% – and the effects of those refill probabilities on reservoir elevations and river flows. That will give us a better sense, I think, of what the risks are, he said.

It sounds as though it still may be useful for the RFC to come in and talk about what they do, Turner said – that might give us a better understanding of how they use error and variability. That’s already been agreed, said Silverberg. The next question is, what do we want the River Forecast Center to talk to us about? Turner said – to me, it sounds like we need a better understanding of how they use the terms “variability” and “error.” It may also be useful to get some information on their new ESP hydrological model, Nielsen said. It was so agreed. We also need to know how the RFC folds all of this information into the forecast itself, Mallette observed. Basically, at this point, what we need is a sense of the risks associated with providing additional flows for chum this winter, Litchfield said.

On the power system emergency front, Bettin suggested that it might be worthwhile to ask someone from Bonneville to discuss the newly formulated emergency response stages and emergency response team. However, because these protocols are not yet fully fleshed out, it may make sense to postpone that presentation until at least January, he said. It was so agreed.

Yoshinaka suggested that it would also be useful to schedule a presentation on the power system in general, covering things like changes in the power market because of the situation in California. There was general agreement that this would be worthwhile.

Has anyone given any thought to Chris Ross’s request that the TMT give him any ideas they might have about how the fish passage information could be made more useful to the in-season management process? McCarty asked. Is the current migration forecast format helpful? Yes, was the reply. Bettin noted that the “fish-o-graph” information was particularly helpful, but he asked that it be provided into the summer period as well as the spring. Bettin said it would also be helpful to post the weekly chum counts on the TMT or FPC homepage. As long as it’s sent to us, we can post it, Turner replied. We will make that information available to the FPC, Mallette said.

8. 2001 Water Management Plan.

Turner stated that the time is now at hand to begin thinking about the 2001 Water Management Plan (WMP); we need to discuss it on January 10. Turner asked that the other TMT participants review the 2000 WMP, located on the TMT website, and indicate at the next TMT meeting what they feel needs to be changed for 2001. Litchfield noted that

the question of how to make informed tradeoff decisions is still out there.

9. Next TMT Meeting Date.

The next meeting of the Technical Management Team was set for Wednesday January 10, 2001, 1 – 4 P.M.
Meeting notes prepared by Jeff Kuechle, BPA contractor.

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