Columbia River Technical Management Team
September 7, 2016
Facilitator's Summary
Facilitator: Emily Plummer, Notes: Charles Wiggins, DS Consulting

The following Facilitator's Summary is intended to capture basic discussion, decisions and actions, as well as point out future actions or issues that may need further discussion at upcoming meetings. This summary is not intended to be the "record" of the meeting, only a reminder for TMT members.

Dworshak Dam Operational Priorities with Unit 3 Out-of-Service

Doug Baus, COE, welcomed the group; he noted that the State of Idaho has developed recommendations for the operation priorities during the Dworshak outage and that the Corps recognizes that others may need more time to review them before commenting. Regardless, the Corps is interested in hearing from the region as to the preferred priorities for operations.

Russ Kiefer, ID, explained that the Dworshak unit 3 outage is underway, which will limit the projects' ability to pass water through the power house. This is not expected to be a significant issue this fall and winter, however, will be a challenge next spring during flood control and fisheries operations. Russ continued that to help support the Corps' in their decision making, and in light of the challenges that this outage will cause for anadromous fish, the State of Idaho (Governor's Office, Dept. of Environmental Quality, and Fish and Game) got together to develop recommended operational priorities. Idaho's recommendations are as follows:

1. Maintain the Biological Opinion's 95% probability of refilling the project for cold water flow augmentation in summer 2017. Having the full amount of cold water flow augmentation available from Dworshak is critical to meeting the 68 degree F criteria in the Lower Granite Dam tailrace and providing flow augmentation during summer 2017 for the benefit of both adult and juvenile listed anadromous fish (especially adult endangered Sockeye Salmon).

2. Avoid exceeding the Idaho water quality standard total concentration of dissolved gas; 110% of saturation at atmospheric pressure at the point of sample collection (IDAPA 58.01.02.250.01.b). The applicability of the gas supersaturation standard shall be in accordance with Section 300 of the Idaho water quality standards (IDAPA 58.01.02.300).

3. Operate to the early April flood control elevation with the large turbine out of service.

Russ noted that the State does not want to exceed water quality standards, however, recognize that this is a possibility with flood control needs and limited capacity. He also spoke to the importance of refilling in order to have augmentation water to support spring migrants and cool water temperatures.

Paul Wagner, NOAA, reported that they discussed Idaho's recommendations at FPAC (9/6/16) and had some questions and need for more information before providing input. The following questions were posed by Salmon Managers during the meeting; responses provided during the call are noted, however, more discussion on these and other questions will take place at the September 21st TMT meeting.

- What is the timeframe for the unit 3 outage and is it a multi-phase project?
    - Steve Hall explained that it is a two-step process: the current step is to rebuild the generator; this is expected to take 8-9 months <u>if all goes as planned.</u> This timeline could be affected by what is found once the generator is disassembled. The next step will be to overhaul the turbine; this will take more time and there is likely to be a break between the two steps. Perhaps the follow-on will be in the 2020 timeframe.

- **ACTION:** Doug will bring a draft timeline, with a description of the work being done, to the TMT meeting on the 21st.

- What are the Nez Perce priorities? They are a key player in the area and have expressed concern about the impacts to hatcheries and native fish rearing in the North Fork of the Clearwater.
  - **ACTION:** Paul and Doug will follow up with Dave Johnson, Nez Perce, to check in on their concerns and input.
- What are the potential effects on spring flows or refill probability given different constraints such as modeling a 110% vs 115% water quality constraint? Modeling these different options would help us better understand the potential risks.
  - Steve Hall, COE, explained that there is some confusion as to the impacts and that there needs to be more discussion at TMT as to the impacts on the operational goals throughout the year. He said that 115% TDG allows more water to be moved through the system, which means more for spring augmentation water. There is a relationship between how deep the pool is drafted and the probability of refill, however, there is not as strong of a relationship between drafting deeper and TDG.
  - **ACTION:** Steve will perform additional modelling and bring results to the September 21st TMT meeting to discuss.
- The spring spill test has been completed. Is there a more final report, or does the information that was presented in April 2016 represent our best information at this time?
  - There is not a more formal report at this time. The Corps has been working with the hatchery on some nitrogen modelling and is in the process of reviewing the information. However, the take home of the test is the same as was presented at the April TMT meeting. Link to the test http://www.nwd-wc.usace.army.mil/tmt/agendas/2016/0511_Dworshak_TDG_115_120_Test.pdf
  - **ACTION:** Steve and Dave Swank, USFWS, will work together to put together a more finalized presentation/data for the September 21st TMT meeting.
- Has the hatchery looked into any other modifications that they can make to help reduce TDG in the hatchery? Our understanding is after the water leaves the degassers it is allowed to plunge back into the water supply system. This plunge could increase TDG slightly and modifying this could help add some additional level of protection.
  - Dave Swank reported that he has talked with the hatchery and they are exploring options. One option is a longer term fix that would not be able to be implemented this year, however, could be in place for the next phase of the overhaul. Other fixes are smaller with smaller impacts. Tom Lorz, Umatilla, suggested that small fixes will still help.
- Is there a window when the hatchery is less susceptible and could pass more water?
  - Dave Swank reported that there are four cohorts that will likely be impacted and the window that fish in river are most susceptible is March-April and mid-May onward.
  - **ACTION:** Dave will send a draft timeline signaling when fish in river and at the hatchery are most susceptible. Doug and Paul will use this timeline to follow-up with Dave Johnson.
- Will TMT get updates on progress, any changes, etc.?
  - Steve Hall agreed to keep TMT privy to the progress, any delays, etc.

Doug Baus asked that TMT revisit BiOp RPA 4 in order to be familiar with the language so that they are aware of when potential actions are within or outside of the RPA. TMT will look at RPA 4 together at the September 21st meeting. This is an in-person meeting, and all are urged to plan to attend. With that, Emily thanked the group for their time and the meeting was adjourned.

The next TMT meeting will be a face to face on September 21st at 9:00am.
Agenda: Dworshak overhaul, input on Idaho Dworshak priorities/ other's priorities, RPA review.

Columbia River Regional Forum
TECHNICAL MANAGEMENT TEAM OFFICIAL MINUTES

September 7, 2016
Minutes: Pat Vivian

1, Introduction

Representatives of Washington, Idaho, CRITFC, USFWS, BOR, NOAA, BPA, COE, Oregon and others participated in today's TMT meeting chaired by Doug Baus, COE, and facilitated by Emily Plummer, DS Consulting.

2, Dworshak Dam Operational Priorities with Unit 3 Out of Service

The purpose of today's conference call was to give Idaho an opportunity to present their operational priorities to TMT regarding the outage of Dworshak unit 3 for approximately the next 9 months that started September 1. Baus acknowledged that TMT members may not be ready to comment on what is happening, so formal comments were deferred until the next TMT meeting on September 21.

Recognizing that the Dworshak unit 3 outage will seriously constrain the Action Agencies' ability to move water through the powerhouse this fall and winter and spring, Russ Kiefer gave Idaho's priorities for operating Dworshak Dam while Unit 3 is out of service. Because the outage will limit powerhouse outflows from Dworshak, it has potential adverse impacts on Snake River sockeye. Therefore the Idaho governor's office, state Department of Environmental Quality and IDFG collaborated to define operational priorities:

1. Maintain a 95% probability of refilling Dworshak for temperature augmentation in spring and summer 2017, as required by the BiOp. This operation is critical for maintaining the 68 degrees F fish passage criteria at the Lower Granite dam tailrace, and is a necessity for endangered Snake River adult sockeye.

2. Avoid exceeding the Idaho water quality standard of 110% TDG in the Dworshak tailrace, due to concerns about Dworshak National Hatchery operations downstream of the dam.

3. Operate to the early April flood control elevation while unit 3 is out of service.

A fuller description of Idaho's priorities and the reasoning behind them is linked to today's agenda. Kiefer acknowledged that balancing a 95% probability of refilling Dworshak reservoir for fish augmentation flows with federal flood control requirements will no doubt pose operational challenges, given the

limitations the unit 3 outage will place on Dworshak powerhouse capacity. While exceedances of the 110% TDG Idaho state water quality standard below the project should be avoided, Kiefer also acknowledged there may be times when managing for winter flood control causes involuntary exceedances. The unit 3 outage could make it more difficult than ever to manage the project to its April flood control elevation while releasing augmentation flows for spring migrants. Kiefer asked TMT for feedback on these priorities.

Paul Wagner, NOAA, reported that FPAC discussed them yesterday, and reservations were expressed about managing to 110% vs 115% TDG below the project because that could interfere with summer refill, Idaho's top priority. More information—such as modeling based on historic flows—will be needed before other TMT stakeholders can endorse these goals. Furthermore, the Nez Perce Tribe has a stake in the outcome and was not able to participate in FPAC's conversation yesterday or today's TMT meeting. The tribe has expressed concerns in the past about the effects of increased TDG levels on the Dworshak National Hatchery and the north fork of the Clearwater River, where fish will be rearing. Wagner also noted that the outage is only the first stage in rehabilitating unit 3, with the generator being repaired this year and the turbine to be rebuilt in future. More information is needed on the COE's long term plans for Dworshak unit 3.

Tom Lorz, CRITFC, raised four questions:

1. What's the actual project schedule? Will the generator repair actually take 9 months as planned, or longer? Will there be check-ins on how the work is progressing?

2. Will there be times when operating to a 110% TDG standard creates a dilemma so the Salmon Managers have to choose between providing flow augmentation for spring migrants and meeting spring refill at Dworshak? If the project adheres to a 110% TDG operational limit, how likely is it to miss refill and by how much?

3. Are there times when the hatchery operation is more sensitive to TDG levels than others? Has the hatchery looked at all possible modifications for TDG improvements, such as rerouting flow from the degasser so it doesn't plunge directly into the raceway?

4. What were the results of the spill test at Dworshak this spring? When and how will these test results be shared with TMT?

Steve Hall, COE Walla Walla, gave initial responses to several of TMT's questions. Regarding the unit 3 work schedule, the COE will give TMT regular progress updates on the generator repair over the next 8-9 months (or longer if complications arise). The COE will also provide modeling to compare the

impacts of 110% and 115% TDG and how it will affect other operational goals at Dworshak. There is indeed a relationship between how deeply the reservoir is drafted and the probability of refill, but the relationship between drafting and TDG levels is more complex and needs to be explored. Release of a final report on the spill test has been delayed because hatchery staff requested analysis of nitrogen as well as TDG.

Dave Swank, USFWS, addressed periodic hatchery sensitivities to TDG. Juvenile steelhead, spring chinook and coho raised in the hatchery are all vulnerable to TDG levels. Typically there is a brief window in March and April when these fish are not being raised in river water so TDG in the river won't be a problem. However, sensitivity to TDG will be high throughout most of March and April and from mid-May through the rest of passage season.

Several TMT members took on action items from today's meeting:

- The USFWS will provide documentation of the Dworshak National Hatchery's schedule to TMT.

- The COE will contact the Nez Perce Tribe regarding the subject of today's meeting.

- The COE and NOAA will follow up with the hatchery on potential TDG impacts to both hatchery fish and native fish in the river.

- USFWS and the COE will work with the hatchery to revise the TDG portions of the Dworshak spill test final report as a separate document (with nitrogen modeling to be done later). Steve Hall will prepare the COE findings, which have already been reviewed extensively by hatchery staff, and present them to TMT at the next meeting September 21.

- The COE will begin modeling to address the issues TMT raised today.

In response to Wagner's concern about the unit 3 repair process, Hall confirmed that only the generator is being rebuilt this year. Rehabilitation of the turbine components will probably happen in 2020 or later.

In response to CRITFC's question #4, Swank said the Dworshak hatchery is investigating a supplemental TDG reduction system, but it involves major modifications that would take at least a year to implement even if funds were available immediately. In the short term, hatchery staff are investigating minor tweaks that could produce small TDG reductions in the degassing system. Lorz asked for documentation of this, and Swank said he will discuss it with hatchery staff.

Erick Van Dyke, Oregon, asked the COE to provide the Dworshak unit 3 schedule for planned maintenance and repair. Baus said that information is currently posted on the FPOM website and he will present it at the next TMT meeting.

Baus reminded everyone that Dworshak operational priorities are directly tied to the 2014 supplemental BiOp, specifically RPA #4, which can be found in Appendix 7 of the 2016 Water Management Plan. Baus will address the RPA requirements and their relevance to Dworshak operations in greater detail at the next TMT meeting September 21.

Name	***Affiliation***
Charles Morrill	Washington
Russ Kiefer	Idaho
Tom Lorz	CRITFC
Dave Plank	USFWS
Chris Runyan	BOR
Paul Wagner	NOAA
Tony Norris	BPA
Doug Baus	COE
Lisa Wright	COE
Aaron Marshall	COE
Julie Ammann	COE
Laura Hamilton	COE
Erick Van Dyke	Oregon
Steve Hall	COE Walla Walla
Wayne Jousma	COE Walla Walla
Ann Setter	COE Walla Walla
Lynn Palensky	NPCC
Margaret Filardo	FPC
Dave Benner	FPC
Mike Shafley	Snohomish PUD
Charles Wiggins	DSC
Erick Van Dyke	Oregon