Columbia River Regional Forum
TECHNICAL MANAGEMENT TEAM—OFFICIAL MINUTES

July 6, 2016
Minutes: Pat Vivian

1. Introduction

Representatives of Washington, Oregon, Nez Perce Tribe, BPA, USFWS, BOR, COE, NOAA, Montana, Idaho, CRITFC/Umatilla Tribe, Yakama Nation and others participated in today's TMT conference call. Doug Baus, COE, served as chair and meeting facilitator. This summary is an official record, not a verbatim transcript.

2. Bonneville Dam Operations

Baus told TMT about the change the COE made to the summer spill operation at Bonneville, which was coordinated with the region yesterday at an FPOM meeting. Attachment 2a (16BON49) on today's agenda provides additional information regarding the summer spill operation change. Yesterday's FPOM consensus was coordinated in response to erosion at the BON Bradford Island B-branch fish ladder.

The summer spill operation identified in the 2016 Fish Operations Plan (FOP) alternates every two days between 85 kcfs day / 121 kcfs night and 95 kcfs 24 hours per day. Because the hydraulic effects of this alternating schedule are likely exacerbating the erosion problems, FPOM members agreed to change the BON spill operation to constant 95 kcfs spill for 24 hours a day from July 5 through August 31.

On July 7 from noon-4 pm, the COE will stop spill through bays 2-18 to conduct a sonar survey of conditions at the BON B-branch fish ladder where erosion is occurring. Spill will cease in all bays except bay 1. Tammy Mackey, COE Portland, was on the phone to answer TMT's questions about the spill interruption.

Dave Statler, Nez Perce Tribe, asked whether the Salmon Managers attending yesterday's FPOM meeting expressed any concern about extending 95 kcfs constant spill for the remainder of the summer spill operation. They were in support of switching to 95 kcfs constant spill, Mackey replied, but the spill interruption for 4 hours could negatively impact fish, and NOAA has requested that effects on fish be kept to a minimum. There was consensus among the fish managers that now is not the best time to stop spill for the sonar survey because it cannot be postponed, Charles Morrill, Washington, added.

Dave Swank, USFWS, asked whether the COE has a theory on what's causing the erosion. Mackey said flow from bay 18 is of major concern, but tomorrow's survey will provide more definitive information. Paul Wagner, NOAA, asked why there was an extended period of 85 kcfs spill at BON, and Laura Hamilton, COE, said it was due to a duty scheduling mistake that has been corrected.

In response to a written list of questions from Oregon, Mackey said there is no study underway at BON that would be affected by spill changes. Further discussion of detailed engineering concerns at BON will continue at FPOM.

3. Dworshak Dam Operations

Alfredo Rodriguez, COE Walla Walla, gave TMT an update on flow and temperature augmentation operations at Dworshak Dam.

On July 1, modeling of temperatures from the Orofino and Anatone gauges showed that with 9.5 kcfs releases from Dworshak, temperatures at the Lower Granite tailwater should stay below 68 degrees F without further augmentation from Dworshak. However, on July 3, modeling results indicated that tailwater temperatures could approach or exceed 68 degrees F in the next 14 days, so DWR releases were increased to 10.5 kcfs, with 9.5 kcfs of that through the powerhouse and 1 kcfs as spill.

Subsequent modeling showed that, with temperatures declining, DWR releases could be reduced to 7.5 kcfs. This water-conserving action was delayed a few days by the Fourth of July holiday. Current modeling shows LWG tailwater temperatures hovering around 66-67 degrees F for the next few days, so the COE does not anticipate any changes in DWR operations.

Statler asked whether this means 7.5 kcfs releases will continue through July 15 unless something unexpected happens; Rodriguez said that's correct. The COE will continue modeling daily for temperature management. On July 3, adult sockeye began passing LWG in large numbers, which indicates that DWR operations are sufficient to support sockeye migration.

4. Little Goose Dam Operations

Today TMT reviewed operations to support fish passage at Little Goose Dam, including (1) the use of rental pumps to cool the adult ladder, (2) removal of the surface weir for juvenile passage, and (3) FOP provisions for spill under low flow conditions.

Pump operations. Ann Setter, COE Walla Walla, gave TMT an update on the operation of rental pumps to cool the Little Goose adult ladder. Routine operation of the pumps began on July 1 at around 11:45 am. The three pumps

are drawing water from 66 ft deep in the forebay, the deepest location feasible using rental equipment. They are powered by a diesel generator that needs to be refueled daily, so the 12,000 gallons per minute (GPM) of cooling flows have to be shut off for 15 minutes a day in order to refuel. The location of one of the pumps will be realigned on July 12 to a better location farther from the ladder exit. The Little Goose forebay is currently isothermal.

In response to a question from Statler, Setter said the two large pumps at LGS are releasing around 4,500-5,000 GPM each, and the smaller pump is releasing around 2500-3,000 GPM, for a minimum 12,000 GPM of cooling flow. This is similar to the pump operation at Lower Granite. Statler asked what temperature of water is being pumped at Little Goose, and Setter said data from the forebay temperature string would provide the closest estimate of that.

Spillway weir removal. Setter followed up on TMT's conversation last week regarding removal of the Little Goose spillway weir. July 11 is the soonest project staff could remove the weir. She asked whether anyone would object to weir removal then.

Russ Kiefer said **Idaho** supports taking the LGS surface weir out of operation and switching to a uniform spill pattern on July 11. Erick Van Dyke said **Oregon** has no comments at this time. Paul Wagner said **NOAA** has no problem with weir removal. The **COE** will therefore remove the weir on July 11, or as close to July 11 as feasible if delayed by weather.

Low flow spill operations. Baus gave TMT an update on the low flow spill operation at LGS as specified in the FOP. Currently the Action Agencies are spilling in accordance with the LGS low flow spill operation that was coordinated with the TMT last year during the June 25, 2015, meeting. The summer spill operation at LGS is 30% but due to operational limitations during low flows the spill operation changes to a fixed rate of 7-11 kcfs dependent on outflow, as specified in the FOP. LGS current outflows are 28 kcfs, and associated spill is 10.8 kcfs or 38% spill. The method used to define the fixed spill rate is based on the previous day's total average outflow, not hourly data.

Baus reiterated the current LGS low flow spill operation the AAs are implementing is based on the operation coordinated during the June 25, 2015, TMT meeting:

LGS Day Average Outflow	Spill Rate
<=32.0 and >=28.0 kcfs	11 kcfs
<=27.9 and >=24.0 kcfs	9 kcfs
<=23.9 and Minimum Generation	7 kcfs

5. Next TMT Meeting

TMT will meet next in a July 13 conference call.

Name	***Affiliation***
Charles Morrill	Washington
Erick Van Dyke	Oregon
Dave Statler	Nez Perce
Scott Bettin	BPA
Dave Swank	USFWS
Mary Mellema	BOR
Chris Runyan	BOR
Makary Hutson	BPA
Tammy Mackey	COE
Doug Baus	COE
Paul Wagner	NOAA
Laura Hamilton	COE
Julie Ammann	COE
Bill Hevlin	NOAA
Lisa Wright	COE
Michelle Yuen	COE
Jim Litchfield	Montana
Alfredo Rodriguez	COE Walla Walla
Steve Hall	COE Walla Walla
Russ Kiefer	Idaho
Ann Setter	COE Walla Walla
Tom Lorz	CRITFC/Umatilla
Tom Iverson	Yakama Nation
Dave Benner	FPC
Margaret Filardo	FPC
XX	Snohomish County PUD