

COLUMBIA RIVER TECHNICAL MANAGEMENT TEAM

May 4, 2015

Facilitator's Summary

Facilitation and Notes, Emily Plummer, 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. These notes are not intended to be the "record" of the meeting, only a reminder for TMT members.

McNary Flow Objectives

Tony Norris, BPA, reported that the McNary flow objective of 180kcfs, which was coordinated at the April 29th TMT meeting and implemented last week, has been drafting the Grand Coulee pool more than previously anticipated. Tony suggested that TMT discuss options to coordinate a lower flow objective to transition to after Wednesday, May 6th. He noted that the streamflow forecasts suggest a flow closer to 160-165kcfs would pass inflow and even draft slightly, however, be more sustainable. Mary Mellema, BOR, noted that the project is concerned that continuing flows of 180kcfs may pose risks to the pool elevation (which BOR does not want to go below 1,243ft), refill probability, and potentially irrigation as well. The Grand Coulee pool is currently at 1,249.1ft. It was reiterated that any water drafted from Coulee now will need to be refilled later; the project is aiming to start refilling in mid-May; the current operation would require flows to drop significantly in order to refill in mid-May. The current operation of 180kcfs weekly average at McNary drafted the Grand Coulee pool by 3ft.

TMT Members had the following questions and comments:

- Q: Do you have a projection on next couple of weeks of inflows?
 - Response: Currently the weekly average is 85kcfs; the Snake River system is not expected to increase flows significantly in the coming weeks.
- Q: The RFC forecast shows 99kcfs, why is there a difference between the BPA forecast and RFC forecast?
 - Response: The RFC forecast is not accounting for the water being pumped to Banks Lake. Also, the 10-day RFC forecasts have consistently been above the observed inflows of late. The trend is for lower forecasts - every forecast we see comes out with less water.

There was discussion around potential consequences of utilizing water now and impacts that it could cause in trying to refill in June. There was some exploration into setting an elevation objective for the project instead of a flow objective, for instance drafting 1-2ft per week for the next week or two. The Salmon Managers are interested in providing water to assist out migrating fish, however, want to limit potential impacts to fish later in the season.

- **ACTION:** FPAC will meet tomorrow morning to discuss McNary flow objectives and provide the Action Agencies with a recommendation before noon tomorrow. The Action Agencies suggested staying within a 165-170kcfs average weekly flow range.

Dworshak Operations

Paul Wagner, NOAA, shared that there is interest in building on a small peak in flow that is

forecasted for Lower Granite. The Salmon Managers would like to increase flows to full powerhouse at Dworshak for a short duration, in hopes that it would build on the natural hydrograph and ideally encourage juvenile fish passage. Initially, the Salmon Managers recommended operating DWR at full powerhouse for 4 days, then cutting back to 7.5kcfs for a day, then 5kcfs for another day, and then holding 2.5kcfs until refill. Steve Hall, USACE-Walla Walla, cautioned that the current draft water supply forecast is assuming normal precipitation, and the basin is not seeing normal precipitation at this point. Steve expressed concern that an operation such as the one proposed by the Salmon Managers would require a steep decrease in outflow, from full powerhouse to 1.6kcfs, in order to begin refilling and would likely exhaust the flexibility of options for the summer season. He also noted that as of the night of May 3rd, the DWR pool elevation 8.5ft below the FCRC, the suggested operation would draft the pool by another foot or so.

TMT Members had the following questions and comments:

- Q: Do you think that we are at a point now that if DWR is operated at full powerhouse for 4 days and then cut back we could hit refill, however, not be able to implement any additional flow augmentation operations?
 - Response: Yes. We are currently approaching 1977 levels of snowpack, we are modeling off of 1977 inflows, however, do not see an increase in precipitation in the basin. The precipitation appears to be heading towards southern Oregon and Idaho. There is not much snowpack left on the ground and there has been some snow melt, however, the cooler weather has meant that that snowmelt is not turning into runoff. .
- Q: Is the intention to refill in May and pass inflow through June? It may be better for fish to use water now to try and get them through the systems and wait to refill in June.
 - Response: The concern is that if we wait to refill in June, there may not be sufficient flows to refill. The region places a high level of importance on DWR refill for summer temperature augmentation. It needs to be understood that if we do 4 days at full powerhouse the remaining flexibility is likely gone; we would expect to have to go from full PH to minimum flows and may not refill.
- Comment: The intent of the suggested increase to full powerhouse is to increase the hydrograph and hope that fish feel the response and move, it is better to make this increase bigger and faster, then prolonging the natural peak.
- Suggestion: Operate DWR at full powerhouse, but for a shorter duration, then step down to refill.
 - **ACTION:** At midnight on May 4th, ramp up to full powerhouse and hold all day Tuesday and Wednesday. TMT will review fish passage and flow data at the May 6th TMT meeting and reassess the operation.
 - **ACTION:** Steve will provide FPAC with an estimated May-June volume assessment – specifically how much water this operation will cost and what will be needed to refill by the end of May. He will get this to FPAC for their 9:00am meeting on May 5th.

It was noted that most likely the project will have to ramp down to 5kcfs on Wednesday night and hold Thursday; then Thursday night ramp down to 2.4kcfs and hold. By May 20th the project will likely have to ramp down to 1.6kcfs to refill by the end of May and then pass inflow. Steve

predicts that June inflow will be about 5.9kcf/s and the ramp down will be relatively linear. TMT will revisit this operation at the May 6th meeting.

The next TMT meeting will be a face to face meeting on May 6th at 9:00am.

Columbia River Regional Forum
TECHNICAL MANAGEMENT TEAM OFFICIAL MINUTES

May 4, 2015
Minutes: Pat Vivian

1. Introduction

Representatives of the COE, BPA, NOAA, Washington, CRITFC/Umatilla, Yakama Nation, Spokane Tribe, Idaho, Oregon, and BOR participated in today's unscheduled TMT conference call to discuss BiOp flow objectives for McNary in light of dwindling water supply. Doug Baus, COE, chaired the discussion, with Emily Plummer, DS Consulting, as meeting facilitator. This summary is an official record of the proceedings, not a verbatim transcript.

2. McNary Flow Objectives

Last week, due to a diminishing water supply forecast, TMT coordinated a weekly average flow target of 180 kcfs at McNary. Unfortunately, implementing 180 kcfs at McNary over the past week drafted Grand Coulee more than expected, Tony Norris, BPA, told TMT today. The more Coulee drafts now, the less augmentation will be available during refill. The Action Agencies recommended a flow target for McNary in the vicinity of 165-170 kcfs as a weekly average.

Until May 13, elevation 1243 ft is considered rock-bottom at Grand Coulee due to irrigation releases and refill concerns, Mary Mellema, BOR, added. With the current elevation at 1249.1 ft and only 6 ft of storage, 180 kcfs at McNary probably isn't sustainable. The BOR plans to start refilling Coulee in mid-May.

Russ Kiefer, Idaho, asked about inflow projections at Grand Coulee over the next few weeks; Norris said BPA foresees 85-90 kcfs as a weekly average. The RFC forecast suggests Coulee inflow will rise from their present level of 94 kcfs to 99 kcfs over the next 10 days. Paul Wagner, NOAA, asked what accounts for the difference. The RFC inflow forecast doesn't include pumping to Banks Lake, which consumes approximately 10 kcfs inflow per day, Norris said. Plus, recent RFC forecasts have been higher than observed flow. While the latest STP projections are for 95 kcfs inflow at Coulee, 10 kcfs of that goes to irrigation pumping, Karl Kanbergs, COE, said.

BPA's recent model results suggest that passing inflow at Coulee over the next few weeks will produce 150-165 kcfs as measured at McNary Dam, with anything more than that coming out of storage. With the limitation of 1243 ft, the consequences of continuing 180 kcfs out could be severe. Idaho suggested targeting a Coulee elevation instead and drafting 1-2 ft as flow augmentation over the next 1-2 weeks to aid spring migrants, which would take Coulee to approximately 1245 ft elevation. BPA and BOR agreed they could manage to 1245 ft elevation by May 14. The Action Agencies asked FPAC for a recommendation in the range of 165-170 kcfs weekly flow average. FPAC will meet

tomorrow morning to make the recommendation. It was acknowledged that Coulee will not be drafted below elevation 1243 ft.

3. Dworshak Operations

Dworshak outflow was reduced to 5.1 kcfs on Friday, May 1. Over the next few days, inflow at Lower Granite are expected to pick up; FPAC's strategy is to build on the natural hydrograph by increasing Dworshak releases over the next 4 days (Tuesday, May 5, through Friday, May 8) to full powerhouse (9.5 kcfs), then evaluate the effect on residual volume. This may be the only opportunity to make use of an increase in the hydrograph. FPAC recommended the following operation:

- 1) Today, Monday, May 4: continue 5.1 kcfs outflow through midnight tonight;
- 2) Tuesday, May 5, through Friday, May 8 increase outflow to 9.5 kcfs (powerhouse capacity);
- 3) Saturday, May 9: decrease outflow to 7.0 kcfs;
- 4) Sunday, May 10: decrease outflow to 4.8 kcfs;
- 5) Monday, May 11: decrease outflow to 2.4 kcfs.

Steve Hall, COE, said this recommendation might be based on water that won't materialize. He proposed to maintain 5 kcfs releases through Friday, May 8, then ramp down to 2.4 kcfs until refill by end May. That operation would provide the most flexibility in case things dry up more. Hall alerted TMT that the COE does not believe there will be sufficient inflow in June to assure refill, which has been identified as a high priority. Modeling based on 1977, the only analog year with flow as low as this year, indicates that continuing 9.5 kcfs out (full powerhouse) would mean having to drop discharges to minimum flow of 1.6 kcfs through refill at the end of May. Dworshak is already 8.5 ft below the latest flood control refill curve, which reflects a 95% probability of refill. Implementing the operation FPAC proposed would draft the reservoir by an additional foot before refill begins.

Releases of 5 kcfs for another 4 days, then 2.4 kcfs daily, would allow flexibility to respond to conditions in May, given that most precipitation over the next 10 days is expected to pass south of the Snake River basin. Because Dworshak inflow could be insufficient for refill in June, the COE plans to refill by end of May and pass inflow in June. Hall asked the Salmon Managers to acknowledge that 4 days of full powerhouse flow now would basically exhaust all operational flexibility at Dworshak later in the season.

Wagner pointed out that RFC forecasts flow at Lower Granite increasing from 55 to 63 kcfs over the next 2 days, and boosting Dworshak outflow to 9.5 kcfs may get fish moving and increase passage at Lower Granite Dam. Hall said FPAC's recommendation to increase Dworshak Dam outflow could still jeopardize summer operations.

The Salmon Managers discussed whether to increase Dworshak outflow to full powerhouse for 2 days vs. 4 days, then review the results at the May 6 TMT meeting, as proposed by NOAA and Idaho. Results from the next fish passage index count might not

be available until Wednesday afternoon after TMT meets. TMT agreed to meet in the morning as usual and reconvene later if necessary.

There was discussion of whether to “front load” releases rather than trying to capture a small peak in the hydrograph as it occurs, an idea promoted by Idaho and Washington. CRITFC/Umatilla supported this idea, but Oregon needed more time to consider it.

Based on coordination with the TMT, the Action Agencies will implement the following operation:

- 1) Today, Monday, May 4: continue 5.1 kcfs outflow through midnight tonight;
- 2) Tuesday, May 5, through Wednesday, May 6 (two days): increase outflow to 9.5 kcfs (powerhouse capacity);
- 3) Thursday, May 7: decrease outflow to 5.1 kcfs;
- 4) Friday, May 8: decrease outflow to 2.4 kcfs.

This schedule means Dworshak will have to ramp down to minimum flow (1.6 kcfs) on approximately May 20 in order to fill by end May. Per NOAA's request, the COE will provide TMT with a calculation of estimated residual volume and forecasted inflow for May-July as of May 8, minus what has been released in May.

Once the project refills, Dworshak will mostly pass inflow in June, which is predicted to be about 5.9 kcfs in the beginning of June and increase to about 8 kcfs by the end of June, based on modeling with 1977 as the analog year, Hall said. Washington expressed interest in swapping water from June with the current operation, but Hall said there's no guarantee that 1977 inflow will actually materialize. If this turns out to be a hot, dry summer, the need for cooling from Dworshak could be severe. If runoff is less than in 1977, weekly average inflow might be as low as 2 or 3 kcfs throughout June, Hall said. TMT will revisit Dworshak operations on May 6.

4. Next TMT Meeting

TMT will meet next at 9 am, May 6, to discuss Dworshak and McNary flow, and will reconvene that afternoon if needed to review the latest fish data from Lower Granite.

Name	Affiliation
Doug Baus	COE
Lisa Wright	COE
Laura Hamilton	COE
Tony Norris	BPA
Scott Bettin	BPA
Paul Wagner	NOAA
Charles Morrill	Washington
Tom Lorz	CRITFC
Steve Hall	COE

Karl Kanbergs	COE
Tom Iverson	Yakama Nation
Bruce Nichols	Spokane Tribe
Russ Kiefer	Idaho
XX	CBB
Erick Van Dyke	Oregon
Agnes Lut	BPA
Mary Mellema	BOR
Greg Bowers	COE
Margaret Filardo	FPC