

COLUMBIA RIVER TECHNICAL MANAGEMENT TEAM

March 28, 2012

Facilitator's Summary

Facilitator: Robin Gumpert

The following notes are a summary of issues that are intended to point out future actions or issues that may need further discussion at upcoming meetings. These notes are not intended to be the "record" of the meeting, only a reminder for TMT members.

Meeting Minutes

The notes from the 3/7 Official Meeting Minutes and Facilitator's Notes were reviewed and, with no suggested edits, finalized at today's meeting. The summaries from 3/21 and today's meeting will be reviewed at the next face to face meeting, scheduled for 4/11.

Water Supply Forecast Update

Doug Baus, COE, shared a water supply forecast update, saying conditions were similar to what was reported last week, with upward trends in water supply seen throughout the basin. The Dalles April-August water supply forecast was 109%. Also, the SNOTEL information showed above normal snow water equivalents throughout most of the basin.

Spring Creek Hatchery Release

Dave Wills, USFWS, reported that, per the Water Management Plan, USFWS was coordinating with the action agencies on Bonneville turbine operations to meet the needs of the Spring Creek hatchery release scheduled to begin on 4/11 assuming spring spill begins on 4/10. The specific operation is similar to that provided last year, operating the Bonneville turbine to the lower portion of the 1% range, fully loading PH1, and stepping up accordingly to meet flow and TDG requirements. In response to a question, Dave responded that it is anticipated the fish will pass quickly again as they did last year, given the high flows in the system. However, for planning purposes, USFWS would like to take the approach outlined while monitoring and making real time adjustments as needed.

Next Steps/Operation – The COE will coordinate with USFWS to develop a teletype and plan to implement the operation as proposed. The COE will post a summary of the operation as an attachment to today's agenda item linked to the TMT web page.

Other: As an informational item regarding the Dworshak Hatchery release, Dave Wills also shared that there will not be a minimum Spring Chinook release and no additional coordination for extra flows will be needed this year. The release is scheduled to occur tonight (March 28). Smolts are released at night to minimize the risk of predation during their migration to the mainstem.

Spill Priority List

The draft spill priority list posted and discussed during last week's TMT meeting was re-posted to today's agenda. Following up from last week, Paul Wagner, NOAA/FPAC Chair, reported that the salmon managers had discussed and developed a recommendation for a revised list given that performance testing at Lower Monumental, Little Goose,

McNary and John Day are not scheduled until later in April. The new proposed list for Level 1 was described as follows:

- Lower Granite (facilitate juvenile passage)
- Little Goose (facilitate juvenile passage)
- Lower Monumental (facilitate juvenile passage)
- Bonneville (to support kelt and juvenile passage)
- John Day
- Ice Harbor
- McNary
- The Dalles
- Chief Joseph up to 110% (through March 31; Remove April 1-23)

Doug Baus, COE, responded that the COE could implement the proposed list beginning April 1 (not before due to TDG waiver requirements) and suggested setting an 'end date' of 4/23 to make changes to the list to accommodate the performance testing scheduled on 4/26 and 4/27. Russ Kiefer, Idaho, offered his preference not to spill right now but, if necessary to meet flow demands in the system, use the salmon managers preferred order listed above, adding Chief Joseph back in to the end of the 110% list.

Action/Next Steps: With all TMT members amenable to this plan, the COE said they would initiate implementation of the lists (the winter list using the above order between now and April 1, and the spring spill priority list also using the above recommended order) until 4/23. On 4/23, the list will revert back to the original draft posted by the COE last week. TMT members will revisit the spill priority list to touch base on whether and how it has been used to date at their next TMT meeting on 4/11.

Kootenai SOR 2012-01

Sue Ireland, Kootenai Tribe, presented an SOR describing a request to provide Libby operations to meet the tribe's needs for the second phase of restoration work planned for this Fall. The specifics of the request were the same as provided last year, including operating Libby at a 6 kcfs minimum in September and at 4 kcfs minimum in October, using a gradual ramp down approach to get to these flow levels.

Bill Proctor, COE RCC Chief, said to do this, the action agency would target an end of August elevation of 2449' and then operate the project to minimum bull trout flows in September (6 kcfs) and October (4 kcfs). Some TMT members responded that while they understand the validity of this approach for planning purposes, they don't want a hard elevation constraint in August to compromise the greater interest in minimizing fluctuations in support of providing biological benefits to resident fish. Brian Marotz, Montana, stressed that data clearly shows the biological impacts of varying the flow levels. Other TMT members including Paul Wagner, NOAA, agreed that they would like to maintain flexibility for in-season management around this operation to meet the multiple needs of the river and lake. Joel Fenolio, COE Seattle, confirmed that the target elevation for August 31 would be managed through in-season coordination with TMT as forecasts and observed conditions develop.

TMT members were polled on their support for the SOR:

- Washington – Supports the operation so long as it protect the river’s ecology
- Oregon – No objection
- Montana – Supports the operation
- Idaho – Supports the operation
- NOAA – Supports the operation with the ability to do in-season management to get to the desired flows
- USFWS – Supports the operation
- CTUIR – Support the request for now and will need to monitor the operation as it progresses in-season
- Nez Perce: No Objection. (Not available for the March 28 meeting but provided the Corps with this response via phone on April 3.)
- Colville Tribes – Supports the operation
- Reclamation – Supports the operation, agrees with the desire to manage the operation in-season
- BPA – Supports the operation
- COE – Supports the operation

Sue Ireland thanked TMT for their time and for agreeing to the request, saying this was a very important project to the Tribe. She offered to provide a slide show of last year’s restoration work at an upcoming TMT meeting.

Vernita Bar Update

Russell Langshaw, Grant County PUD, used an Excel spreadsheet to show data and the process for setting protection levels and dates to protect fish in the Hanford Reach. Protection flows began on 3/8 and are expected to end on 6/19 (this date might change). The specific operation at Priest Rapids was 107.1 kcfs discharge, with a 41.3 kcfs daily delta and 54.3 kcfs daily delta constraint. There have been no exceedances to date. Russell noted in response to a question that comparisons to previous years can be done by linking to those data sets – which were available via the spreadsheet that is continuously updated and can be found on the PUD’s website.

Russell will provide another Vernita Bar update along with stranding entrapment results at the 4/11 TMT meeting.

Operations Review

Reservoirs – John Roache, Reclamation, reported on projects. Hungry Horse was at elevation 3529.58 feet, with 5.5 kcfs out and plans to ramp up outflows again in early April to manage the increasing water supply forecast and expected lower flood control elevations. Grand Coulee was at elevation 1261.3 feet and drafting about a foot per day – to target a flood control elevation of 1220-1225 feet end of April. Drum gate maintenance is being planned at Grand Coulee. Lisa Wright, COE, reported on projects. Libby was at elevation 2404.6 feet, with 4.1 kcfs in and 16.4 kcfs out. Drafts were expected to increase out of Libby, Dworshak and Brownlee with the upward trend in water supply forecasts. Albeni Falls was at elevation 2054.5 feet with 25 kcfs in and 29.6 kcfs out. Priest Rapids

inflows were 154.1 kcfs. Dworshak elevation was 1523.1 feet with 10.2 kcfs in and 10.6 kcfs out. Lower Granite inflows were 91.7 kcfs; McNary inflows were 279.9 kcfs; and Bonneville inflows were 249.4 kcfs.

Fish – Paul Wagner, NOAA, reported that the traps were in on the Salmon River and so far, about 1,000-2,000 yearling Chinook have passed – as many as 1/3 of those natural/wild. Lower Granite saw about 6,000 pass and Bonneville saw about 600 pass – some of the latter were thought to be over-wintering yearling Fall Chinook. Charles Morrill, Washington, added that many of the yearling Chinook passing Lower Granite were unclipped fish. Steelhead counts were 2,000/day at Lower Granite. Juvenile lamprey counts at Bonneville were about 300/day. With respect to adults, 33 spring Chinook and 79 steelhead had been observed passing Bonneville; about 200 steelhead passed Lower Granite; and five kelt observed passing through the juvenile facility at Bonneville.

Water quality – Laura Hamilton, COE, reported that the gauges are in place and are tracking TDG. Some spill has already occurred in the Lower Snake and Columbia projects due to the high flows. Format changes were made to the reporting screen as requested by TMT members. Also, the Chief Joseph spill test had begun. Joel Fenolio, Seattle District COE, reported that TDG levels so far were lower than expected. Joel will provide a full report from the test at the next TMT meeting.

Power system – Tony Norris, BPA, reported that BPA is trying to manage over-generation given the high flows and offered a proposal for TMT consideration. The recommendation was to delay drafting the Snake projects to MOP. Typically, all 4 Lower Snake projects are drafted to MOP no later than 0001 hours on April 3. BPA's proposal is to stagger drafting the projects to MOP one project per day beginning on April 3. Lower Granite would be drafted for flood control so would be at MOP by 0001 hours on April 3, then each subsequent downstream project would be drafted to MOP, one per day over the next 3 days – Little Goose by 2400 hours on April 3, Lower Monumental by 2400 hours on April 4, and Ice Harbor by 2400 hours on April 5. This would allow BPA to alleviate over-generation conditions in March and allow them to manage it in April when they are better prepared to do so. Tony said this shift would move alleviate up to 500 megawatts of over-generation from March to April.

Next steps/Action: The salmon managers said they needed to caucus on this issue before they could respond to the request, and BPA needed to follow up with the Nez Perce Tribe who was not represented at the meeting. TMT agreed to revisit this issue at 9:00 AM on 3/29, which would allow time for coordination and still have the opportunity to implement the operation. (*See Facilitator's Notes for 3/29 TMT meeting for more information.)

Next Meeting, 4/11: Face to Face, 9:00 am

Agenda items include:

- Updated Water Supply Forecasts
- Hanford Reach Update
- Spill Priority List Check In

- Chief Joseph Spill Test Report
- Operations Review
- Other?

Columbia River Regional Forum
TECHNICAL MANAGEMENT TEAM – OFFICIAL MINUTES

March 28, 2012
Notes: Pat Vivian

1. Introduction

Today's TMT meeting was chaired by Doug Baus, COE, and facilitated by Robin Gumpert, DS Consulting. Representatives of the COE, Montana, NOAA, BPA, BOR, Idaho, Oregon, USFWS, Montana, the Kootenai and Colville tribes, CRITFC/Umatilla Tribe and others attended. This summary is an official record of the proceedings, not a verbatim transcript.

2. Review March 7 Meeting Minutes

There were no suggested changes today, so the facilitator's notes and official minutes for March 7 were deemed final. Review of the March 21 notes and minutes was postponed until the next TMT meeting on April 11.

3. NWRFC Water Supply Forecast Update

Conditions are similar to last year, Baus reported. Water supplies are above average throughout most of the region, with the exception of southeastern Idaho. Today's forecast for the Columbia River at The Dalles is 109% of average. Information from the westwide SNOTEL sites is consistent with the RFC water supply forecast, which is forecasting above normal water supplies throughout most of the basin. In comparing forecasts over time, it's important to focus on actual volumes rather than percentages of normal because the percentages change whenever the 30-year normals are updated, Tony Norris, BPA, said.

4. Vernita Bar Update

Russell Langshaw, Grant PUD, presented the latest temperature and flow data for the Hanford Reach chinook protection program. This information is linked to the TMT agenda and is updated daily.

Protection flows began on March 8 and are projected to end June 19 this year. Temperatures so far have been following the historical mean closely after a big drop in January. Current temperatures are a few degrees F below average. Last year was warmer for most of fall and early winter, so temperature units added up quickly. However, by mid-winter 2011-12, the tally dropped below average, resulting in a long protection period. This year, the protection period will probably be closer to average length. Mean daily discharges for the past 7 days are 150 kcfs, with a daily delta of 41.3 kcfs.

Langshaw will give another update at the next TMT meeting April 11. He will also report on the results of the 2011 stranding and entrapment study.

5. Kootenai SOR re: Libby Operations

Sue Ireland, Kootenai Tribe, presented this SOR, which calls for operating Libby at minimum flows in September (6 kcfs) and October (4 kcfs) to implement phase 2 of the Kootenai River Habitat Restoration Project. Phase 1 went well last year, thanks to regional support.

Joel Fenolio, COE Seattle district, added that an elevation of 2449 ft at the end of August would be targeted to the extent possible, without focusing on exact volumes or flows to be released between the end of the sturgeon pulse and August 31. Seattle District will coordinate, as needed, with TMT on the operation to reach 2449 ft end of August. Bill Proctor, COE, specified that the action agency commitment is to a target elevation of 2449 ft by end of August and then minimum flows in September and October, not elevation targets, at the end of September and October. In order to achieve minimum flows in September of 6 kcfs the COE will ramp down flows as gradually as possible given the forecasted and observed weather conditions, and will coordinate operations in July and August through TMT as necessary.

TMT members gave their views of the Kootenai SOR:

- **Idaho** – Supports the SOR.
- **Montana** – Support the operation if the rampdown is gradual.
- **NOAA** – Supports the operation. Agrees that river operations shouldn't be driven by an elevation target.
- **Washington** – Supports the operation.
- **Oregon** – No objections at this time.
- **CRITFC/Umatilla** – Supports the operation.
- **Colville Tribe** – Supports the operation if the rampdown is gradual.
- **USFWS** – No objections.
- **BOR** – Supports the operation.
- **BPA** – Supports the operation.
- **COE** – Supports the operation.

There was consensus today on targeting elevation 2449 ft at the end August and holding minimum flows of 6 kcfs in September and 4 kcfs in October for planning purposes. While this is the coordinated operation some TMT members voiced concerns regarding the consequences of focusing on elevations at times that may have adverse impacts on river biology. Meeting the specifics of this request needs to be balanced with concerns for river biology. The action agencies will coordinate the specifics of this operation through TMT as necessary.

6. Spring Creek Hatchery Release

Dave Wills, USFWS, made a request today for specific turbine operations at Bonneville Dam to facilitate the release of approximately 8 million juvenile tule fall Chinook salmon on the morning of April 11 from the Spring Creek Hatchery. The USFWS request called for beginning the Spring Creek Hatchery Release Bonneville Powerhouse operation on the morning of April 12 with the following specific operational requests, to be implemented in order to provide increased levels of generation as necessary:

1. Operate PH2 Units up to 25% of the operating range.
2. Then, operate PH1 Units up to 100% of the operating range (full capacity).
3. Then if necessary due to high flows, incrementally increase PH2 units one at a time within 25-50% of the operating range, then one at a time within 50-100% of the operating range.
4. Then if flows exceed powerhouse capacity (all available units at both powerhouses are at full capacity), increase spill as necessary above the spring spill rate of 100 kcfs as prescribed in the 2012 FOP.
5. Voluntary spill associated with this operation will be limited by the lower spill rate identified in either: 1) FOP spill rate of 100 kcfs or 2) 120%/115% TDG fish passage spill cap rate.
6. The end date for the operation is currently requested to be on April 20, but this date will be adaptively managed based on real-time smolt passage observations at the Smolt Monitoring Facility.

A process similar to last year's could work well again this year, Wills said. Norris asked whether any adjustments are needed based on lessons learned last year. Wills said nothing different is needed this year, considering that the start and end dates could be adjusted based on real-time smolt passage conditions observed at the Smolt Monitoring Facility to help shape the operation. If flows are high again this year, fish will probably move faster than usual, and the operation could end early. The COE will post details of the operation on the TMT website.

Doug Baus, COE, indicated the COE would implement the USFWS request consistent with the 2011 operation but added a point of clarification associated with ambiguity that occurred during the 2011 operation. Spill rates at

Bonneville Dam identified in the FOP are governed by the 120/115% TDG fish passage spill cap. At times the spill cap may be lower than the BON spill rate identified in the FOP. When there is a difference between the voluntary spill rate identified in the FOP and the 120/115% TDG fish passage spill cap the Action Agencies spill at the lower rate.

Lisa Wright, COE, explained the operation would be increased incrementally, one unit at a time, in powerhouse 2 until full capacity is reached. At that point any additional flow would be involuntary spill that could exceed FOP spill levels. The COE will coordinate with USFWS on the specifics of the teletype to be issued to project staff.

Normally USFWS would coordinate the Dworshak spring chinook release with TMT members if extra flows are needed to push fish into the mainstem. However, this year USFWS will not be doing a minimum release at Dworshak, Wills reported. The hatchery will release spring chinook tonight. The release is done at night to minimize bird predation and give fish an opportunity to take cover in the mainstem. No other coordination is needed for extra flows.

7. Spill Priority List

Paul Wagner reported on yesterday's FPAC discussion of the draft spill priority list presented at last week's TMT meeting, which is posted to today's agenda. The salmon managers recommended the following spill priority order of Lower Snake and Lower Columbia projects: 1) Lower Granite, 2) Little Goose, 3) Lower Monumental, 4) Bonneville, 5) John Day, 6) Ice Harbor, 7) McNary, 8) The Dalles. Chief Joseph would be implemented only after all Lower Snake and Lower Columbia projects have reached 120% TDG. Idaho and USFWS representatives expressed support for these recommended changes.

In response to the salmon managers' request, Baus said the action agencies had come up with a second draft of the spill priority list, which will be posted to today's agenda. The action agencies made an effort to move Snake River projects to the top of the level 1 list. However, Doug Baus, COE, and Laura Hamilton, COE, clarified that prior to April 1, the TDG waiver is not in effect so the wintertime spill priority list that is currently in place through March 31 needs to include Chief Joe at earlier levels (110% and 115%). The order of mainstem projects on the wintertime spill priority list can be re-ordered to reflect the salmon managers' request, but Chief Joseph will be included at Level 1 (up to 110%) and Level 2 (up to 115%) since the TDG waiver is not yet in effect. The list that will go into effect April 1-23 will not include Chief Joe before spilling mainstem projects to 120%, as requested by the salmon managers. Additionally the Action Agencies would be considering the order of the spill priority list due to the forthcoming spring BiOp performance standard testing that will be commencing between approximately April 26-27 at Little Goose, Lower Monumental, McNary, and John Day.

Russ Kiefer, Idaho, recommended following the salmon managers' spill priorities up to TDG saturation rates of 110% until midnight April 1, then following the same order to 115% and 120% TDG spill caps once the waivers go into effect. The action agencies agreed to this and will revise the list to include a 110% TDG category, with Chief Joseph in this category. There were no objections to this course of action. Baus will give a presentation on the spill priority list at the next TMT meeting.

8. Operations Review

a. Reservoirs. Grand Coulee is at elevation 1261.3 feet and drafting because the forecast at The Dalles has increased. An end of April flood control elevation in the 1220-1225 foot range is expected. Hungry Horse is at elevation 3529.58 feet, ramping up from minimum flows and currently releasing 5.5 kcfs, which will probably increase in April in response to the water supply forecast. The April final forecast is expected to rise and the flood control elevation to drop accordingly.

Libby is at elevation 2404.6 feet with inflows of 4.1 kcfs and releases of 16.4 kcfs. Albeni Falls is at elevation 2054.5 feet with inflows of 25 kcfs and releases of 29.6 kcfs. Priest Rapids inflows are 154.1 kcfs. Dworshak is at elevation 1523.1 feet with inflows of 10.2 kcfs and discharges of 10.6 kcfs.

Lower Granite inflows are 91.7 kcfs. McNary inflows are 279.9 kcfs. Bonneville inflows are 249.4 kcfs.

b. Fish. Juveniles: The trap on the Salmon River has caught 1,000-2,000 fish, many of them hatchery fish, Paul Wagner reported. Approximately a third of these fish are naturally produced, Russ Kiefer added. Lower Granite daily counts are 3,000-6,000 fish, a mix of hatchery and wild. The Bonneville daily count was in the thousands due to the Klickitat Hatchery release, but that count has dropped to 400-500 fish per day. Some 3,000-4,000 subyearling chinook from the mid Columbia have been seen passing Bonneville daily. Kiefer commented that many of the yearlings passing Bonneville are overwintering fall chinook.

Charles Morrill, Washington, reported a higher proportion this year of untagged yearling chinook without a coded wire tag than expected which are generally naturally bred fish. Steelhead have been passing Lower Granite at the rate of a couple thousand per day, a mix of hatchery and wild fish, Wagner reported. Lamprey counts at Bonneville are a few hundred per day and around 20 per day at Lower Granite. Morrill and Wagner agreed that counts of lamprey at Lower Granite are not a good indication of what's actually happening since they generally pass through the separator and subsequently are not counted.

Adults: So far, 33 spring chinook adults have passed Bonneville this season at the rate of a couple per day, Wagner reported. The same is true of spring chinook jacks. Summer steelhead have gotten an early start this year.

c. Water Quality. Laura Hamilton, COE, reported that all TDG gages are in place and operating. As of last night, all lower Snake and lower Columbia projects had begun spilling, beginning with McNary on March 14 and Ice Harbor on March 26. Spill is expected to continue until spill season starts in response to high inflow forecasts.

Chief Joseph has been spilling around 60 kcfs for the spill test, producing TDG levels of 124-129%. Joel reported that at 30 kcfs per bay, pressures in the monoliths have stabilized below critical levels. The next step is to increase spill to 40 kcfs per bay at around 2200 hours tonight. The test will be completed within 48 hours, as coordinated previously. The flow-weighted average between the powerhouse and spillway is 122% TDG, and the tailwater (not mixed river) reading is 129% TDG. The current tailwater elevation is 785.2 feet, and the COE plans to keep it around 786 feet.

Richelle Beck, Grant PUD, asked for clarification of the mixed-river TDG saturation levels coming from Chief Joseph. The best way to calculate this would be the flow-weighted average in the forebay and spillway, plus flows going through the spillway and powerhouse 2, Fenolio replied. The COE won't have real time data on this until the flow monitors are pulled. Fenolio will give a report on the spill test at the April 11 TMT meeting.

d. Power System.

Tony Norris, BPA, proposed an operation to help manage overgeneration in the next week and a half. With inflows increasing, BPA proposes to consecutively draft the lower Snake River projects from upstream to downstream starting with Little Goose by midnight on April 3 (Lower Granite is being drafted for flood control and will already be at MOP by April 3). Postponing these MOP releases until the first week of April would help BPA manage overgeneration in March. This could move as much as 500 MW of generation into April, when fish spill takes some generation off the system. The proposal would increase flow and generation at each project in April as the projects draft toward MOP. There would not necessarily be increased spill but a greater likelihood of lack of market spill above FOP levels at these projects.

The Corps of Engineers had indicated that consensus is needed to implement the proposal because it would change planned operations under the FOP. Recognizing that a decision on the proposal must come quickly in order to offer any value, representatives from Washington, USFWS, CRITFC and the Kootenai Tribe agreed to a caucus after today's meeting. TMT will revisit the proposal in a conference call tomorrow morning.

4. Next TMT Meeting

After tomorrow's conference call regarding MOP, the next regular TMT meeting will be on April 11, with a conference call on April 4 if needed.

Name	Affiliation
Doug Baus	COE
Jim Litchfield	Montana
Paul Wagner	NOAA
Lisa Wright	COE
Tony Norris	BPA
John Roache	BOR
Russ Kiefer	Idaho
Locke Christman	BPA
Laura Hamilton	COE
Karl Kanbergs	COE
Bill Proctor	COE

Phone:

Rick Kruger	Oregon
David Wills	USFWS
Tim Lenahan	Lenahan Co.
Brian Marotz	Montana
Greg Hoffman	COE Libby Dam
Jason Flory	USFWS Idaho
Shane Scott	PPC
Dave Benner	FPC
Joel Fenolio	COE
Barry Espenson	CBB
Don Tinker	SCL
Heather Dohan	Puget
Bruce MCKay	consultant
XX	Grant PUD
Josh McCall	Puget
Mike Shapley	Snohomish
Tara Kelly	JP Morgan
Richelle Beck	Grant PUD
Sue Ireland	Kootenai Tribe
Sheri Sears	Colville Tribe
Charles Morrill	Washington
Tom Lorz	CRITFC/Umatilla
Steve Hall	COE
Joel Fenolio	COE