COLUMBIA RIVER TECHNICAL MANAGEMENT TEAM

July 29, 2015

Facilitator's Summary

Facilitator, Emily Plummer; Notes, Tory Hines, 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.

Dworshak/Lower Granite Water Temperature

Steve Hall, COE-Walla Walla, updated TMT on Dworshak and Lower Granite water temperatures. He noted that current Lower Granite tailwater temperature is 66.6 degrees Fahrenheit. Temperatures at Lower Granite are cooling due to the cooler air over the last few days. He continued that last week's model results showed a decrease in temperatures by a degree, allowing a reduction in discharge to 7.5kcfs, as previously coordinated at TMT. Steve noted that air temperatures are forecasted to increase, thus following a two-day hold at 7.5kcfs, the Corps anticipates returning to full powerhouse to avoid any exceedances at the end of the forecast period. Steve stated that the water temperature comparison models compare a full powerhouse operation at Dworshak to a 7.5kcfs operation. Under the 7.5kcfs operation, temperature exceedances would occur on August 6th, while the full powerhouse operation would keep temperatures under the 68 degree Fahrenheit criteria.

Steve also noted that on August 3rd, there will be a planned outage to repair a damaged transmission breaker. The request will constrain the project to 1 unit, spilling to gas cap with a discharge of 3,000cfs. Tony Norris, BPA, noted the repair is straight forward and will occur from 0700 hours to 1500 hours, taking 6 hours to complete. Steve requested feedback from the salmon managers as to the desired operation for August, suggesting that either the project operate at or below the 68 degree Fahrenheit criteria, or operate at a flat flow for the month of August. Steve noted that with the current planned operation, approximately 6.5kcfs will be available across the month of August to get down to 1,535ft by August 31st. He also noted that water will run out if the average is above 6.5kcfs, which will increase temperatures and result in an excess of 70 degrees Fahrenheit at the LWG tailwater.

Russ Kiefer, ID, expressed appreciation for the Corps effort on scaling back discharge to conserve water. The Salmon Managers caucused and discussed a recommendation for Dworshak operations. The Salmon Managers present (Nez Perce, ID, NOAA, WDFW, Umatilla, OR, Colville and USFWS) suggested keeping the 68 degree Fahrenheit criteria until August 3rd , then following the planned outage, decrease discharge to 7.5kcfs for one week, and after one week reconvene reassess operations moving forward.

- **ACTION:** Per the Salmon Manager's suggestions, The Corps will implement the operation as follows: maintain discharge at 7.5kcfs until July 31st, and then resume full powerhouse operations at midnight on July 31st. On August 3rd the operation will reduce discharge to 3kcfs during breaker repair from 0700 hours to 1500 hours. Following the planned outage, the operation will return to a discharge of 7.5kcfs for one week. TMT members will revisit the operation at the next TMT Meeting on August 5th to determine water volume availability and whether to implement a flat flow for the remainder of August.

Emergency Trapping and Transport of Snake River Sockeye Operations Update

Trevor Condor, NOAA, provided an update on the emergency trapping and transport of adult Snake River Sockeye operation. He noted that emergency trapping of adult Sockeye at the Lower Granite dam began on July 13th, in an effort to transport endangered Sockeye to the Eagle Creek Hatchery in Idaho. Trapping occurred for 4 hours during morning periods, this criteria was lifted yesterday after it was determined that zero Sockeye have died during the operation; the trapping duration has been extended to 8 hours a day, 4 hours in the morning and 4 hours in the afternoon. He continued that a total of 41 fish have been trapped and hauled, which is considered a success seeing as 0 fish migrated to the hatchery prior to the emergency operation.

Russ Kiefer, ID, noted that Sockeye trapped under the emergency operation are brought to the Eagle Creek Fish Hatchery for tagging and genetic analysis before being released into Red Fish Lake or Alturas Lake. Trevor noted that PIT-tagged fish were detected at the Redfish Lake trap and in the Salmon River, which could indicate more fish are migrating as temperatures cool. He continued that Nez Perce is holding Sockeye collected at the juvenile bypass separator in the kelt tanks at Lower Granite dam. Russ acknowledged the work of the Nez Perce tribe, noting that they sent tribe members to Lower Granite to move fish to the kelt tanks until the transport vehicle arrived the next day. Russ also noted that following a snorkel survey, they decided not to trap and haul from the Lyons Ferry Hatchery due to very low Sockeye sightings.

Doug Baus, COE-NWD, noted that the second emergency experimental operation is underway at Little Goose Dam. He noted that the Corps implemented NOAA's and IDFG's recommended experimental emergency operation at Little Goose, which entailed a two-day period (7/27-29) of no spill during the daylight hours of 4:00AM to 8:00PM and a period of single unit operation at minimum generation while spilling the remainder of outflow during the nighttime hours of 8:00PM to 4:00AM. Doug provided Corps feedback on 3 suggested operation changes, which were provided by USFWS and FPC:(1) the assessment provided by Steve Haeseker, (2) cycling of the navigation locks and (3) pump installation in the Little Goose forebay.

1. It was noted that based on Steve Haeseker's assessment, there was no compelling evidence to warrant a change in the experimental operation at Little Goose at this time.
2. Due to the current status of the navigation lock at LGS the Corps does not recommend cycling it. Ann Setter, COE-Walla Walla, noted that there are issues with the navigation locks, only 1 valve is operational at this point, and the return to service date is unknown. The navigation lock can still operate with 1 valve; however the refill time is greatly increased and the reliability of the navigation system is questionable.
    - Tom Lorz, Umatilla, requested the Corps send out an updated MOC describing the implications of having 1 operational valve.
    - Umatilla also noted that navigation locks as a tool for passage is an appropriate discussion piece for SRWG and he will add it to the agenda to be discussed at the August 7th meeting.
3. The Corps noted that due to funding, contracting and implementation needs, acquisition of a pump in the Little Goose forebay to cool the fish ladder is not a short-term viable option.
    - Umatilla noted that this issue is likely to arise again and a forebay pump would be a good option to cool temperatures in an emergency situation, which the Corps should pursue for later this season.
    - Erick Van Dyke, Oregon, recommended the Corps devise a long term 'emergency situation' contract that will anticipate these types of issues and enable the region to make swift decisions in times of need.

- **ACTION:** The Corps implemented NOAA's recommended emergency operation at Little Goose as follows: July 27-29 of no spill during daylight hours of 4:00AM to 8:00PM and a period of single unit operation at minimum generation while spilling the remainder of outflow during nighttime hours of 8:00PM to 4:00AM.
- **ACTION:** The Corps will look into pump feasibility at the Little Goose forebay for the upcoming Fall Chinook season and provide an update when available.
- **ACTION:** The Corps will explore Oregon's suggestion of devising a long term contract that allows for swift decision making in emergency situations, e.g. contracting for a forebay pump in a low water year.
- **ACTION:** The discussion of navigation locks as a fish passage tool will be discussed at SRWG on August 7th.

Operations Review

Reservoirs

Mary Mellema, BOR, reported on changes at the Reclamation projects:

- Hungry Horse discharge was lowered to 1.8kcfs.

Lisa Wright, COE-NWD, reported on Corps projects:

- There have been no significant changes to reservoirs since the 7/27 TMT report.
- Jim Litchfield, MT, requested the Corps review temperatures at Libby which are running too cold.

Fish

Trevor Condor, NOAA, provided an update on fish. For adults, he noted that the Sockeye run at Bonneville has concluded and numbers have tinkered off at McNary. He noted that numbers at Ice Harbor and Lower Granite are not following the normal run distribution due to heat. Lower Granite counts are also declining but the high variability in the count data indicates there may be some potential for a slight increase in passage if temperatures cool and the fish are are still able to migrate. Currently adult Chinook runs are transitioning between summer and fall; Steelhead numbers are increasing at Bonneville which is expected at the end of July. For juveniles, Little Goose numbers are around 255 and declining, numbers are extremely low throughout the system.

Water Quality

Nothing to report.

Power Systems

Nothing to report.

The next TMT meeting will be a conference call on Thursday, July 30th at 2:00.

Columbia River Regional Forum
TECHNICAL MANAGEMENT TEAM—OFFICIAL MINUTES

July 29, 2015
Minutes: Pat Vivian

1. Introduction

Representatives of the COE, BPA, NOAA, Washington, Oregon, Montana, Colville Tribe, Idaho, USFWS, BOR, Yakama Tribe, Nez Perce Tribe and others participated in today's TMT meeting. Doug Baus, COE, chaired the meeting with facilitation by Emily Plummer, DS Consulting. This summary is an official record of the proceedings, not a verbatim transcript.

2. Review Meeting Minutes – July 27

Review of meeting minutes was deferred to the next regular TMT meeting.

3. Dworshak/Lower Granite Water Temperature

Steve Hall, COE Walla Walla, reported. Current water temperature at Lower Granite tailwater is 66.6 degrees F and declining in response to the recent cool weather. Model results from yesterday show several days of lower water temperatures as releases from Dworshak (DWR) take effect at Lower Granite.

Based on this cooling trend, the COE, based on previous requests by TMT, reduced DWR releases to 7.5 kcfs at midnight last night. The intent is to hold 7.5 kcfs for the next two days, increasing discharges again to full powerhouse at midnight Thursday, July 30, in response to the forecasted hot weather this weekend. Attachment 3b to today's agenda compares the effects of 7.5 kcfs and full powerhouse flows with three days of travel time from Dworshak to Lower Granite. The modeling shows 7.5 kcfs releases may result in exceeding the 68 degrees F threshold by Monday, August 6, at the end of the forecast period. Full powerhouse flows would result in temperatures remaining around approximately 67 degrees F.

A required outage at DWR for transmission system repairs from 8 am to 2 pm is scheduled on Monday, August 6, and will limit outflow to approximately 3 kcfs, or one small unit passing 2.2 kcfs plus 0.8 kcfs of spill (limited to the 110% gas cap). On August 3 at 6 am, the project will begin ramping down from full powerhouse to 3 kcfs for the outage. It will take a couple hours to ramp back up to full powerhouse again beginning at 2 pm on August 6, subject to TMT's recommendation today.

Trevor Conder, NOAA, asked whether the outage could become an extended one, with Dworshak releases stuck at 2.5 kcfs. Tony Norris, BPA, said the repair is straightforward so an extended outage is unlikely.

Hall summarized the Dworshak operation to date: at midnight last night, discharges were reduced from full powerhouse (approximately 9.9 kcfs) down to 7.5 kcfs for the next two

days. At midnight on July 30, releases will increase back up to full powerhouse until around 6 am on Monday, August 3, when the project will start ramping down to 3 kcfs for the transmission outage through approximately 2pm.

The Salmon Managers were asked for feedback on whether to: 1) maintain the 68 degrees F standard at the LWG tailwater through the end of July and then go to a flat flow in August; or 2) maintain the 68 degrees F temperature standard into August. Hall calculated that the two days of 7.5 kcfs releases will put the reservoir at 1559 ft elevation by July 31, leaving approximately 6.5 kcfs flat discharges through August to reach elevation 1535 ft by August 31.

If TMT advises today that the 68 degrees F target be relinquished, it would probably mean that at times, the LWG tailwater will reach 70 degrees F, depending on ambient air temperatures and solar radiation. By contrast, operating to the 68 degrees F standard beyond July 31 would probably require average DWR releases of 8-8.5 kcfs into August, meaning the water supply will run out before August ends. Dave Statler, Nez Perce Tribe, asked if this could be modeled, and Hall said the model isn't designed for long term projections because weather forecasts beyond 5 days are unreliable. In the past, when DWR unit 3 went offline and the project was limited to 7.5 kcfs, temperatures at the LWG tailwater went up to 70-71 degrees F.

Russ Kiefer, Idaho, proposed targeting 68 degrees F at LWG for one more week, then switch to a flat flow. NOAA supported this proposal and recommended the possibility of switching to flat flow even sooner if sockeye passage drops off significantly. The Salmon Managers present (**Idaho, Nez Perce, NOAA, Washington, Oregon** and **Umatilla**) held a caucus and recommended that Dworshak operate to maintain the LWG tailwater below 68 degrees F through August 3, at which time Dworshak flows will be reduced to 7.5 kcfs for approximately one week, followed by flat flows apportioned so the project reaches 1535 ft on August 31. Hall recommended that Dworshak operate at full powerhouse before the outage and 7.5 kcfs after it ends. The model indicates full powerhouse flows will be adequate to maintain the LWG tailwater below 68 degrees F.

TMT members were polled on this operation:

- **Idaho** – No objection
- **Colville Tribe** – No objection
- **NOAA** – No objection
- **Montana** – No objection
- **CRITFC/Umatilla** – No objection
- **Nez Perce Tribe** – No objection, assuming releases are limited to full powerhouse.

The COE will continue to operate Dworshak with 7.5 kcfs releases until midnight July 30, then increase to full powerhouse. On Monday, August 3, Dworshak will ramp down to approximately 3 kcfs outflow from approximately 6am-2pm for the transmission outage, then ramp back up to 7.5 kcfs for one week (approximately August 11). The remaining volume will be released at a constant discharge to target elevation 1535 ft on August 31. TMT will revisit this operation at its next meeting August 5.

4. Emergency Trapping and Transport of Snake River Sockeye

Trevor Conder, NOAA, reported on the emergency trap and haul operation for adult sockeye at Lower Granite Dam. Since July 13, the trap has been operated for 4 hours each morning, Monday-Friday, so IDFG can transport adult sockeye to the Eagle Creek Fish Hatchery's broodstock program. As of yesterday, NOAA increased the number of allowable hours for trapping to 8 hours/day since the trapping effort so far has resulted in zero mortalities and no additional take. To date, 41 adult sockeye have been trapped and hauled.Also, one PIT-tagged sockeye has been detected at the Redfish Lake trap and one at the Salmon River trap, indicating that at least a few fish have successfully migrated through the system to near the spawning grounds.

Russ Kiefer reported that every morning, Idaho also transports any sockeye that fell back through the juvenile bypass that are held at the kelt facility, with crucial assistance from the Nez Perce Tribe. Also, the Lyons Ferry Hatchery on the north shore between Lower Monumental and Little Goose dams has been serving as a cool refuge for fish, with a few sockeye observed there among the many salmon and steelhead. The ratio of chinook/steelhead to sockeye there is approximately 50:1. After snorkel-surveying the area, Idaho decided not to transport these sockeye because it would require trapping large numbers of Chinook and steelhead in order to trap potentially only one sockeye, with a high risk of injuring or stressing fish in the process.

Baus gave a report on the experimental emergency operation at Little Goose. The first 2-day test occurred July 23-24. A second 2-day test began yesterday, July 28, at 4am, and will continue through tomorrow, July 30, at 4am. The experimental operation consists of no spill and all outflow through the turbines during daytime hours of 4am to 8pm, and one unit operated at minimum generation and the remainder of outflow spilled during nighttime hours of 8pm to 4am. Currently, Little Goose outflow is 25 kcfs. When the experimental operation ends tomorrow at 4am, the project will resume FOP spill operations of 7, 9, or 11 kcfs dependant on the previous day's average outflow, as coordinated at TMT.

Baus also reported on the COE's response to three requests received from Salmon Managers in response to an email he sent TMT members July 27:

1. <u>Little Goose operation.</u> Steve Haeseker, USFWS, submitted an analysis that correlated low sockeye passage at Little Goose with warm temperatures at the ladder exit, and concluded that this experimental operation would not improve sockeye passage because it would not the cool ladder exit. The Corps reviewed the analyses and considered this information along with other information presented by NOAA and the Corps, prior to deciding to implement the test.

2. <u>Cycle Little Goose navigation lock.</u> There was a suggestion that the COE cycle the navigation lock at Little Goose to provide an alternative passage route for sockeye. After evaluating this option, the COE decided not to pursue it because the lock needs maintenance, and cycling it could cause lock failure. Replacement of a hydraulic power unit to operate the lock is currently underway, scheduled for completion July 30, Ann

Setter, COE, reported. Tony Norris, BPA, explained that it fills more slowly with only one sill valve working, and Setter added this impacts the reliability of lock operations, with lock failure to be avoided at all costs. **Oregon**, **Nez Perce Tribe, USFWS** and **CRITFC/Umatilla** representatives asked the COE for more details. They inquired about normal lock operation vs. its present condition, and the depth at which water enters the lock. Lorz said the lock could serve as a viable route for sockeye passage in desperate times such as these. Fish use locks on a regular basis, so it would be a good idea to investigate the details of lock operation, Trevor Conder said. Steve Haeseker, **USFWS,** pointed out that PIT tag data indicate adult sockeye are passing Ice Harbor and McNary without being detected in the ladders, which implies that potentially up to 10-15% of sockeye runs use the locks for passage at those projects. While similar data don't exist for Little Goose and Lower Monumental, the same phenomenon could apply. Further discussion of the potential for using locks to aid fish passage will occur at a SRWG meeting August 7 and at FFDWRG.

3. Pump cool water from deep in LGS forebay into the adult ladder. Analysis at FPOM suggests ladder temperatures are critical to sockeye passage; when water at the ladder exit hits 74-77 degrees F, passage stalls, Haeseker said. Baus said the COE will investigate this option for Little Goose, including funding needs and contractual requirements; Setter said funding is a barrier in the short-term. Problems with high water temperatures will no doubt recur later this summer, with fall Chinook migration coming in about 5 weeks, Tom Lorz, **CRITFC/Umatilla,** warned. He asked the COE to respond to the Salmon Managers' request for funding information this year. Erick Van Dyke, **Oregon,** suggested the COE set up a contract with funding set aside over multiple years to respond to emergencies.

In addition, Charles Morrill, **Washington,** suggested investigating the options for trapping and holding adult sockeye at Ice Harbor. He also suggested the region consider collecting broodstock throughout the course of the run if similar conditions reoccur next year.

A tentative TMT meeting is scheduled for 2 pm tomorrow, July 30, to review results of the Little Goose experimental operation and the Lower Granite emergency trap and haul operation and consider next steps.

5. Operations Review

5a. Reservoirs. Today's reports focused on changes since the last operations review. The only noteworthy change is that Hungry Horse discharges dropped to 1.8 kcfs last night, Mary Mellema, BOR said. Lisa Wright, COE, said there have been no changes in the operation of COE projects. Ironically, water temperatures at Libby are too cold, Jim Litchfield, Montana, reported.

5b. Fish. Adults: Trevor Conder reported. Sockeye counts at Bonneville have dropped and the run is nearing its end, with a few stragglers still moving upstream. Based on FPC fish counts, Lower Granite shows the most potential for continuing to pass adult sockeye.

Steelhead passage is on the rise at Bonneville. There's a lull between summer and fall chinook passage.

Juveniles: The subyearling Chinook index count at Little Goose is 255 fish and declining. Passage numbers are low all the way through the system.

5c. Water Quality. There was nothing to report.

5d. Power System. There was nothing to report.

6. Next TMT Meeting

TMT will meet next in person on August 5. There will be a special meeting tomorrow at 2 pm to discuss the Little Goose experimental operation and next steps.

Name	***Affiliation***
Steve Barton	COE
Tony Norris	BPA
Julie Ammann	COE
Tory Hines	DSC
Lisa Wright	COE
Doug Baus	COE
Trevor Conder	NOAA
Charles Morrill	Washington
Dan Feil	COE
Julie Doumbia	BPA
Karl Kanbergs	COE
Laura Hamilton	COE
Erick Van Dyke	Oregon
Jim Litchfield	Montana
Tom Lorz	CRITFC/Umatilla

Phone:

Sheri Sears	Colville
Russ Kiefer	Idaho
Joe Skalicky	USFWS
Mary Mellema	BOR
Steve Haeseker	USFWS
Scott Bettin	BPA
Steve Hall	COE Walla Walla
Ann Setter	COE Walla Walla
Margaret Filardo	FPC
Tom Iverson	Yakama
Paula Calvert	ODEQ
Kathryn Kostow	Oregon
Jim Brand	CBB

Dave Statler	Nez Perce Tribe
Michael Tehan	NOAA