

COLUMBIA RIVER REGIONAL FORUM

TECHNICAL MANAGEMENT TEAM

May 27, 2009 Meeting

FACILITATOR'S SUMMARY NOTES ON FUTURE ACTIONS

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.

Review of Minutes/Agenda

The May 13 Facilitator Notes and Official Meeting Minutes were posted and, with no further comments, were considered final. Notes from the May 20, 22 and today's May 27 meeting will be finalized at the next TMT meeting.

Transition Emergency Actions Plan

TMT had received BPA's draft TEAP during the May 20 TMT meeting and had offered a few comments at that time, which BPA incorporated into a revised draft presented today. Mike Viles from the Transmission Business Line discussed in further detail the pre-emptive actions list and talked about the next step Alert 1 actions, all of which would be measures taken prior to impacting fish protection measures. In response to a question about what the COE is doing to reduce bottlenecks in the power system, Mike shared that new lines were being built in busier areas and that BPA had been awarded additional borrowing authority to step up those actions. It was suggested that TMT might take a Fall field trip to look at dispatch and better understand the real-time decisions that are made.

Next Steps: Tony will invite someone from BPA to discuss an annual letter that describes from power services to connect and control groups what their requirements are for declaring emergencies. This presentation will likely happen at a TMT meeting in June, TBD. Any comments on the TEAP should be shared with Tony Norris, BPA.

Sturgeon Pulse Operations

Dan Feil and Joel Fenolio, COE, updated TMT that temperatures were beginning to stratify but were not ready yet to begin the sturgeon pulse at Libby – the current expectation was that the operation will begin on June 8: ramping Libby up to full load for 7 days, per the SOR presented at the May 20 TMT meeting. Joel said the operation would begin no later than June 15 and offered to provide updated information and visuals at the next TMT meeting.

Upper Snake Flow Augmentation Update

John Roache, BOR, shared an update that the BOR still expects to release 487 kaf flow augmentation from the Upper Snake this year, starting on June 1 with a release of water above Milner. Flow augmentation from the Boise will also be released in June. Flow augmentation from the Payette will be released primarily in July and August due to water quality concerns. John offered to share more details with TMT as they are known.

Spill Priority List

As follow up from the May 20 TMT meeting, the COE shared feedback with the salmon managers on their proposed spill priority list. The COE agreed with the rationale for the priorities given the current conditions and operations, with the exception of the 120 kcfs request at Bonneville: given implications to adult fallback, the COE would not spill above 110 kcfs at Bonneville.

Action: Laura Hamilton, COE, will write up a new teletype to reflect the suggested spill priority list and COE response, and share it with TMT when it is released. (**NOTE:** A follow up email was sent on 5/28 from the COE indicating a few minor changes that were made to the list, which was sent out to TMT.)

Lower Granite Barge Maneuvering Test

The COE shared that as part of the fish facility re-design at Lower Granite, there is a need for a test to determine the best location for providing access to loading barges during spill. The COE acknowledged that this issue was being brought to TMT last minute, and this was due to sudden availability of funds to move forward with the work. The test, currently scheduled for June 4, would require 12 hours of flows at 130 kcfs. With the forecast showing the project being around 110-120 kcfs, the COE suggested that the additional water could be made up by increasing storage in the pool, thereby operating outside MOP.

A presentation on this was shared with FPAC on 5/26. FPAC responded that they had hoped for flexibility around the date, and absent that option, provided other options, noting that MOP operations are a court ordered fish protection measure. Options included: Using Dworshak flows to augment (**NOTE:** the Nez Perce Tribe was not at the FPAC meeting so had not weighed in on this or any of the options) or providing spill elsewhere in the system such as nighttime spill at Little Goose, or spill at Lower Monumental or Ice Harbor – this they believe would continue to move the fish while the Lower Granite pool was filling. While the ‘net effect’ for water travel time from a hydrologic standpoint might not be much, the timing of the fish arrival and passage at each of the projects from a biological standpoint was of concern to the salmon managers – factoring in predation and other stresses. Finally, FPAC asked whether Idaho Power had been contacted to explore options for how it might provide support for this operation/test.

The COE suggested that June 4 was chosen specifically because the smallest tugboat and largest barge would both be at the project at that time. In response to a question about the Water Control Manual that guides the COE not to operate outside MOP if Lower Granite flows are above 120 kcfs due to local flooding concerns at Lewiston, the COE suggested that the deviation from MOP would only be needed if flows were below 120 kcfs. Finally, they suggested that actual operations would depend on the natural condition that day; if today’s ESP forecast is accurate, the COE estimated that the operational need would be MOP+1 or MOP+2 for a period of 24 hours or less.

TMT members weighed in on the COE’s proposal to operate outside MOP if necessary to provide 130 kcfs flows at Lower Granite for the test on June 4:

- Oregon: Opposed to operating outside MOP given that it is an important, court ordered fish protection measure. If operating outside MOP, compensate by providing spill elsewhere in the system. Other options suggested were to conduct the test at the flow available in the system on June 4, or conduct it at a later time.
- Idaho: Supports the study and test at 130 kcfs and believe it is possible to do this with compensation through spill at another project. The state of Idaho does not support using Dworshak flows to augment for this operation. No official objection but do feel that deviations from MOP should be of concern to the action agencies.
- Montana: Wants to see more details about the operation; supports the test to find the best fish facility redesign and with this objective met at what conceptually appears to outweigh the short term costs, no objection to the proposed operation.
- NOAA: Support the study at 130 kcfs and believe that providing some spill elsewhere to compensate for the loss at Lower Granite during storage into the pool would help make the fish protection measures whole, even if the difference is small. The benefits of the test in providing the best information for re-design of the fish facility will be important and might outweigh the short term ‘costs’; still, do not take the costs lightly. No objection to the operation.
- BPA: It is important to find the best location for the fish facility. From a hydrologic perspective, there does not appear to be much change in water travel time – want to see the details of the operation. Defer to the COE to make the final decision as there would be no financial impact from any of the options generated today. In this case, adaptive management should be used.
- BOR: Sees the value of the test and 130 kcfs flows would provide optimum conditions to get the best results. Water travel time does not seem to be a problem from a hydrologic perspective but do not know the biological impacts. Defer to the COE to make the final decision.
- CRITFC: Would like to wait to see more details about the proposed operation before weighing in.

ACTION: The COE will run operating scenarios to show at various natural flow levels what would be needed in terms of MOP operations to bring Lower Granite up to 130 kcfs for a 12-hour period. This information will be shared with the region as soon as possible (before June 3) and TMT will discuss this issue again during their meeting on June 3.

Dworshak Unit 3 Outage

Steve Hall, Walla Walla District COE, shared information with TMT about a leak on Dworshak’s unit 3 discovered late Friday afternoon. The unit has since been out of service as it is dewatered for inspection. The cause, exact location and extent of the damage were yet unknown – the COE hoped to have more information in the next one to two weeks. The short term impact to operations was that Dworshak outflows were reduced to 5 kcfs. In response to a question, Steve suggested that this issue had no impact to flood control but that gas cap exceedances were the concern. He also shared that a snow flight was planned for June 11 to verify the percentage of snow covered area which will be important for setting summer operations at this project.

Next Steps: The COE will keep TMT apprised via email as new information is available – this issue will also be revisited at the June 3 TMT meeting. The COE has not looked in any depth at next step operating options given they do not understand the extent of the damage nor how long it will take to repair; however they are considering how to address TDG issues including options for obtaining waivers to go beyond the current TDG limits set by the state of Idaho and Nez Perce Tribe.

Operations Review

Reservoirs: Grand Coulee was at elevation 1265.6' feet and filling. Hungry Horse was at 3529.1 feet with 6.1 kcfs out and filling with 18-19 kcfs in. Outflows would be reduced to about 5.1 kcfs on 5/28. Libby was at elevation 2410.5 feet with 29.1 kcfs in and 13.4 kcfs out. Albeni Falls was at elevation 2059.5 feet with 74.5 kcfs in and 65.2 kcfs out. Dworshak was at elevation 1568.9 kcfs with 22.5 kcfs in and 5 kcfs out. Lower Granite day average flows were 164 kcfs; McNary day average flows were 331 kcfs; and Bonneville day average flows were 334 kcfs.

Fish: Adults – Cindy LeFleur, Washington, reported that the TAC updated their run size estimates at Bonneville to 160,000 plus or minus 5,000. 105,000 had been counted to date and the spring counts would continue through June 15. A concern with adult travel delays between Lower Monumental and Little Goose, upon closer inspection, revealed that the fish had in fact made it to Lower Granite so there was likely no delay. Counting errors of jacks and adults might have been the cause of the mis-read.

Juveniles – Paul Wagner, NOAA, reported that most of the yearling chinook were in the lower river, with about 70,000 at McNary and 40,000-60,000 at Bonneville. Sub-yearling counts had picked up to 17,000 at Lower Granite and 19,000 at Little Goose. Steelhead counts were around 38,000 at Lower Granite and 46,000 at Little Goose. Sockeye counts were about 4,000 at Little Goose. Adult numbers were tracking above the 10 year average and were later than the 10-year average. Jack numbers were far above the 10-year average. Juvenile timing was tracking well with the 10-year average at Lower Granite. Steelhead were earlier than expected.

Power System: Nothing to report.

Water Quality: Laura Hamilton reported that with the recent involuntary spill on the Snake River, a number of TDG exceedances had occurred, with the most occurrences at Camas/Washougal, Bonneville forebay and Ice Harbor forebay. She noted that exceedances at the Bonneville forebay were unusual and likely had been impacted by spillwall construction work at The Dalles.

Other: The salmon managers provided revisions to BPA's Emergency Actions list – Tony Norris, BPA, said he would make the changes and send the revised list to TMT and schedulers prior to the June 3 TMT meeting.

TMT Schedule: June 3 Face to Face, June 17 Face to Face/Conference Call (TBD), June 24 Face to Face

June 3 meeting agenda items include:

- Finalize May 20, 22, 27 Facilitator Notes and Official Minutes
- Update on Sturgeon Pulse Operation at Libby
- Lower Granite Barge Maneuvering Test
- Dworshak Unit 3 Outage
- Summer Operations / Draft Summer Fish Operations Plan
- Operations Review

**Columbia River Regional Forum
Technical Management Team Meeting
May 27, 2009**

1. Introduction

Today's TMT meeting was chaired by Dan Feil (COE) and facilitated by Robin Gumpert (DS Consulting), with representatives of Washington, Oregon, Idaho, COE, BPA, BOR, NOAA, CRITFC and others participating. The following is a summary (not a verbatim transcript) of the topics discussed and decisions made at the meeting. Anyone with questions or comments about these notes should provide them to the TMT chair or bring them to the next meeting.

2. Review Meeting Minutes for May 13, 2009

There were no comments on either the May 13 facilitator's notes or official minutes, which were deemed final.

3. Transmission Emergency Action Plan

Tony Norris (BPA) and Mike Viles (BPA TBL) gave a more detailed presentation of the Transmission Emergency Action Plan (TEAP). The TEAP has been revised since the last TMT meeting in response to a comment from Jim Litchfield, MT but it might still need more work, Norris said. The section on generator dropping was moved to the bottom of the emergency actions list because it's a transmission-related emergency action that protects the power system from failing.

Generator dropping is usually a response to the loss of a transmission line, which tends to overload surrounding lines. The automated software for this function maximizes use of the transmission system because it monitors dispatches and precludes the need to limit transmission during a line outage to prevent overload. This in turn allows for generation up to maximum levels to keep TDG levels down during spring runoff. This automated system allows BPA to guarantee stakeholders will be notified within 24 hours if generation drops.

The challenge is that BPA can't guarantee 24-hour notice of all types of generation-related interruptions to fish protection measures. There are two types of actions, automated (instantaneously or within seconds) and coordinated (within 20 minutes). Automated remedial transmission actions offer no opportunity for human intervention. That changes once duty schedulers get involved and can take steps to preserve fish protection measures. Viles asked TMT for suggestions on dealing with this uncertainty.

The preemptive actions list in the TEAP includes transmission actions the dispatcher has up to 20 minutes to coordinate with duty schedulers. Viles described each item on the list.

1. Coordinate scheduled transmission maintenance – Any planned maintenance is coordinated around fish protection measures, including scheduling line outages to avoid fish migration season.

2. No additional transmission sales on a transmission path experiencing congestion will be allowed – If an area is approaching its transmission limit, BPA will stop sales so the transmission system isn't forced over the limit. Typically the dispatcher requests that all sales be stopped under this condition.

3. Implement reliability redispatch of federal and non federal generation in the BPA balancing authority area – Different generators within BPA's balancing authority can decrease or increase power generation, which helps balance the flow of transmission to avoid transmission problems that might impact fish measures. This occurs on an hourly basis. BPA incorporates the cost of the protective measure into its rates.

4. Coordinate with BPA power services hydro duty schedulers to determine whether discretionary redispatch of federal generation can be done under Attachment M of the Open Access Transmission Tariff – This tariff allows transmission and hydro duty schedulers to work together on solving problems that arise so there is minimal or no impact to fish protection measures.

5. Curtail transmission schedules as appropriate to minimize or avoid transmission system emergencies – In this case, the transmission system goes above its operating limit, and BPA curtails the schedule to get it back under the limit. From the moment the system goes above its limit, BPA has 20 minutes to get it below the limit before violating reliability standards.

Items 2 and 3 on the list now allow BPA to issue a merchant alert without first issuing a NERC alert. This is a powerful tool in terms of avoiding transmission impacts to fish protection measures.

To address transmission bottlenecks, BPA has been identifying which parts of the system need reinforcement. The work in part will be funded by BPA's additional borrowing authority under the federal stimulus package. This will provide at least two new transmission lines, one being built now between McNary and John Day dams in response to wind generation development, and another to be built soon from Castle Rock, Washington, to Troutdale, Oregon. More transmission projects will be identified by late fall 2009.

BPA will refine the paragraph in the TEAP on generation dropping and repost the new version to the TMT web page. Next month, BPA will send the connecting control areas in WECC a letter describing the procedure they must follow to request energy from BPA in a generation emergency. That would be a good time for TMT to revisit this topic. In the meantime, any comments on the TEAP should go to Tony Norris.

4. Sturgeon Operations at Libby – SOR-FWS#1

The tentative date for beginning the sturgeon pulse, which was unspecified in this SOR submitted to the COE last week, is June 8, no later than June 15, Joel Fenolio (COE NWS) said. TMT will revisit the sturgeon pulse at its next meeting.

5. Upper Snake Flow Augmentation Update

The BOR's current goal is to provide 487 kaf of flow augmentation this summer from the Upper Snake River, John Roache (BOR) reported. Approximately 200,000 acre feet of this volume will come from above Milner Dam. Flows will ramp up to around 2,200-2,500 cfs around June 1 and remain at that level through about July 15. Flow augmentation in the Boise basin will follow sometime in June after flood control ends.

There will be less of a shift in time for flows in the Payette basin due to water quality issues. These are related to elevation and temperatures of Lake Cascade. BOR is working on moving some of the Payette flow augmentation volume earlier.

6. Spill Priority List

The list, which was discussed last week but not posted online, is linked to today's agenda. The Fish Managers have ranked the projects in the following order: Bonneville; Ice Harbor; McNary; Lower Monumental (change bulk spill pattern to uniform); Little Goose (spill up to 125 kcfs at night and fully load the powerhouse before spilling more than 30% of inflows during daytime); Lower Granite; Chief Joseph; Grand Coulee; The Dalles; and Dworshak.

The COE agrees with the rationale behind this order but is not willing to spill above 120 kcfs at Bonneville, due to strong indications that higher levels of spill create adult fallback problems there this time of year. Spill of 110 kcfs is considered safe.

The Salmon Managers placed Bonneville at the top of the spill priority list because that's where in-river passage is peaking now, making it the most effective location for spill, Paul Wagner (NOAA) said. The upriver projects are in transportation mode, so spill there should be avoided.

The limitation on spill at Bonneville will last only for the next few weeks until the summer operation begins, Feil said. When migration patterns move into summer mode, TMT will revise the spill priority list accordingly.

7. Lower Granite Barge Maneuvering Test

Lynn Reese (COE) gave a presentation on this 12-hour test, which has been scheduled for June 4 on very short notice. The reasons for that are the short-term availability of stimulus funds, the fact that June 4 falls nicely between

spring and summer migration activity, and other navigational concerns such as the availability of the correct tug and barge combination.

As part of redesigning the fish facility at Lower Granite, the COE may move the juvenile loading facility to a location that is safer to navigate to and from during spill and high flows. To help identify an optimal location, the study will use real time interviews with barge captains during the approach and egress plus video surveillance and acoustic surveys to study eddies and spill patterns at current and proposed dock locations. The test includes scrutiny of the best outfall location for returning juveniles to the river. Barge captains have noted that spill of 130 kcfs causes navigation problems at the dock, so flows of at least 130 kcfs are desirable on June 4 to study these problems. Video equipment will be left in place to record what happens during low flows of summer, when eddies make it difficult for fish barges to leave the loading dock.

While flows from Lower Granite are now 150-160 kcfs, based on recent modeling they are expected to be only 112-113 on June 4, Hall said. The COE plans to do the barge test then even if flows aren't 130 kcfs. TMT members agreed that 130 kcfs resulting from inflows at Lower Granite for 12 hours on June 4 would be ideal. However, there was concern about what to do if spill doesn't reach 130 kcfs due to inflows. A COE presentation to FPAC yesterday proposed storing water in the Lower Granite pool for release on June 4 to create 130 kcfs flows. This would simulate the problem the test is addressing, but it would cause the pool to rise above MOP by anywhere from MOP+1 to MOP+2.5 feet.

Its unfortunate there's no flexibility in the test date, Wagner said. The volume of water requested for June 4 is not great, but fish managers are concerned about going outside of MOP because it's part of the court order calling for no impacts on fish protection measures. The purpose of the MOP operation is to increase water velocity and help move fish downstream, so deviating from it could mean slowing the migration to the ocean, Wagner said. Later flows could compensate by speeding migration, but the biological effects of that are unclear, due in part to concerns about the length of the storage period.

The Salmon Managers proposed an alternative to offset the impact of MOP exceedance at other projects, most likely compensatory spill at Lower Monumental or Ice Harbor. Another possibility is spilling at Little Goose above 30% at night. Feil asked whether the effects this could have on transportation were considered; Russ Kiefer (Idaho) said yes. While the impact of going outside MOP at Lower Granite will be small, there's general agreement among the fish managers that slowing migration to the ocean at this time of year will reduce adult return rates, Kiefer said. And migration conditions get progressively worse as time passes, especially for spring migrants, Wagner said. The fish managers' goal is to meet the needs of the test without impacting fish protection measures. One possibility is to ask Idaho Power whether discharges from Brownlee Dam could be scheduled on the day of the test. The COE has not checked into that.

The Nez Perce Tribe wasn't part of yesterday's FPAC call or today's meeting, so they will need to be polled, Wagner and Kiefer said. Historically, the tribe has advocated using flow augmentation from Dworshak when more fall Chinook juveniles are out-migrating in June. Therefore, as a representative of Idaho on TMT, which includes the Nez Perce view, Kiefer didn't support using flow augmentation from Dworshak for the barge test.

Typically the COE cannot use the entire range of MOP to MOP+1, which yields about 8 kcfs of spill, so inflows to the pool could increase by 5 kcfs without violating MOP constraints, Steve Hall (COE) said. If flows are below 120 kcfs on June 4, the COE wants flexibility to fill to MOP+2, which would provide 16 kcfs of added spill, the amount needed to create flows of 130 kcfs.

The COE will provide TMT with scenarios depicting effects of filling the pool above MOP and releasing the water the next day, Feil said. Navigation scheduling precludes finding a window of time to go below MOP. Kiefer requested that the scenarios show what's possible without dropping flows at Lower Granite below 100 kcfs; TMT will work together on that. Members were then polled on their views.

Oregon – Objected to going outside the MOP constraints for any reason. Do the test with whatever flows are available, without impacting fish measures. The Lower Granite fish facility remodel is a long-term project, with no guarantees of funding in 2011 when the 2-year construction project is scheduled to begin. There will be other opportunities to do the test if June 4 doesn't work out. Releasing more water after the test won't offset the MOP violation – it could speed migration for some groups of fish while slowing others down, exposing them to increased predation and stress.

Washington – If the court order says stay at MOP, there should be offsets for deviating from it.

Idaho – Supports conducting the study, and believes it could be done with compensation to keep the fish migration whole. Idaho advocated increasing spill at Lower Monumental and Ice Harbor to offset the MOP violation. They didn't support using flow augmentation from Dworshak for the test. Expressed disappointment at the lack of an offset in the COE's plans, but won't object because the effects will be small and the benefits of the test significant.

Montana – Supports the test and the best redesign of the fish facility possible, and didn't object to the COE's plans for carrying it out. Upgrading the Lower Granite fish facility design will avoid future spill interruptions that harm fish. Impacts of MOP violations appear small, but Montana wants more details in the form of scenarios.

NOAA – Agrees that the impact of the test will be minor; nevertheless, accommodation to keep the migration whole would be preferable. The barge test

is worth the investment. The delay issue isn't to be taken lightly although the impacts will be small.

BPA – Deferred to the COE and the Salmon Managers to work out this issue.

BOR – Also deferred to the COE and Salmon Managers on this issue. The test should be done under flows that will provide the best result.

CRITFC – The decision should be deferred until modeled scenarios are available.

8. Dworshak Unit 3 Outage

On the afternoon of May 22, just before a 3-day holiday weekend, the COE learned of a leak in the turbine pit of the big unit at Dworshak which accounts for over half the powerhouse discharge. The leak is estimated at 250-300 gallons per minute, enough to overwhelm two 4-inch gravity drains, Hall said. The unit is out of service and being dewatered for visual inspection. Pinpointing the leak could take a week or two. Depending on the findings, the outage could last from a month to a year and a half if the unit must be completely disassembled. The problem is exacerbated by of the de-certified cranes onsite needing repair in order to perform the work.

Effects in the near term are that Dworshak can release only 7-8 cfs or about half its normal flows without violating the 110% gas cap. This limit would remain until the unit is repaired because use of the unit before repair could result in a catastrophic failure that could destroy the powerhouse.

Flood control isn't an issue because the project can still release flood flows via the RO gates and the spillway. The project is currently discharging 5 kcfs using 2 small units. Dworshak and Libby don't have backup generators, and the aging equipment is approaching the end of its design life.

Margaret Filardo (FPC) asked whether the COE has requested a waiver of the 110% TDG standard, given the potential for affecting the volume of flow augmentation available in summer. It's too early for that, Feil replied. The COE will keep TMT posted as more information on the leak becomes available.

9. Emergency Actions List

Paul Wagner gave Tony Norris a revised emergency actions list that the Salmon Managers developed in their recent FPAC call. The positions of Ice Harbor and Little Goose have changed, in part to reflect the added spillway weir at Goose in 2009. Norris will revise the list and send it to TMT members.

10. Operations Review

a. Reservoirs. Grand Coulee is at elevation 1,265.6 and filling. The end of May flood control elevation is 1,273.8 feet.

Hungry Horse is at elevation 3,529.1 feet, discharging 6.1 kcfs and filling. Yesterday inflows were 18-19 kcfs, with 25 kcfs forecasted this weekend. Discharges will drop to 5.1 kcfs on the evening of May 28.

Libby is at elevation 2,410.5 feet, with inflows of 29.1 kcfs and outflows of 13.4 kcfs. Albeni Falls is at elevation 2,059.5 feet, with inflows of 74.5 kcfs and outflows of 64.5 kcfs. Dworshak is at elevation 1,568.9 feet with inflows of 22.5 kcfs and outflows of 5 kcfs.

Seven-day average inflows are 164 kcfs at Lower Granite, 331 kcfs at McNary, and 344 kcfs at Bonneville. There has been involuntary spill at Snake River projects for the past several days.

b. Fish. Adults – The technical advisory committee for *US v. Oregon* updated the run size at the Bonneville river mouth to 160,000 plus or minus 5,000 fish, Cindy LeFleur (Washington) reported. The projected final count at Bonneville is 140,000 fish.

In response to concern that adults are being delayed between Lower Monumental and Lower Granite, Kiefer had asked FPC staff to account for average travel time during this period using PIT tagged fish. The response was that once travel time is accounted for, all PIT tagged fish that passed Ice Harbor a week ago have made it to Lower Granite. This is good news, Kiefer said, because it appears that adults are not being delayed at Little Goose. Adult passage is generally above the 10-year average for this date, with 2009 runs being very late, Wagner reported.

Smolts – Spring migration is nearing its conclusion at the upper river projects, but not at Bonneville, Wagner said. Increased flows brought increased passage – when Snake River flows were 130-140 kcfs, the passage index went up to 160,000-180,000, then dropped to zero due to shutdown of the juvenile facility for 3 days. The most recent index count is 10,000 fish. Little Goose index counts are 50,000, and 15,000 at the upper river projects. McNary index counts recently dropped from 250,000 to 70,000. Bonneville index counts are in the 40,000-60,000 range.

Subyearling passage is increasing, Wagner reported. The most recent index count is 15,000 at Lower Granite and 19,000 at Little Goose. Subyearling counts are less in the lower river. Steelhead passage peaked at 150,000 at Lower Granite and is in the range of 38,000 now, with a similar trend at Little Goose. In terms of ESU juvenile passage, Lower Granite is above the 10-year average.

Sockeye PIT tag counts have increased from 20,000 to 60,000 fish, Kiefer said, due to a pilot study of Snake River sockeye in Idaho. Increased counts

mean more PIT tagged fish, not a larger run size. The total smolt release was 170,000-180,000 fish, with 65,000 of them PIT tagged. Wagner showed TMT graphs that indicate these PIT tagged fish made it to the ocean. Smolt passage data showed similar results for spring Chinook and steelhead passage. Sockeye passage looks low in relation to the 10-year average, but Wenatchee sockeye have probably not been accounted for.

c. Power System. There was nothing to report.

d. Water Quality. Involuntary spill began May 20 on the lower Snake River and May 21 for the lower Columbia River, Laura Hamilton (COE) reported. There have been 72 TDG exceedances to date in May, with most occurring at Camas Washougal gage, followed by Bonneville and Ice Harbor forebays. This could be the result of spill wall construction at The Dalles, which requires a bulk spill pattern. John Day is not currently spilling 30-40% inflows, but The Dalles is.

9. Next Meeting

The next TMT meeting will be June 3, possibly in person or a conference call depending on topics to be discussed. The sturgeon pulse, Lower Granite barge test planning, an update on the Dworshak unit outage, review of meeting notes and the operations review will be on the agenda. A TMT conference call is scheduled for June 17, and a meeting in person on June 24. This summary prepared by consultant and writer Pat Vivian.

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Russ Kiefer	Idaho
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