

COLUMBIA RIVER REGIONAL FORUM

TECHNICAL MANAGEMENT TEAM

April 9, 2008 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.

Official Minutes/Facilitator Notes

A comment made to the 2/27 facilitator notes made by Paul Wagner, NOAA, at the March 26 meeting will be incorporated by Jim Adams, COE, and sent to TMT to show they have been finalized.

The 4/2 conference call Minutes were posted to the web. TMT members did not have comments on the notes, so they were determined to be final as of today.

Announcements

Kyle Dittmer, CRITFC, reported that a long term agreement between three of the four CRITFC Tribes and the Action Agencies has been reached, the details of which are still being discussed. Additional information about this agreement can be found on CRITFC's website or salmonrecovery.org. Kyle also suggested that CRITFC's Public Information Officer can be reached at 503-238-0667. One aspect of this agreement under discussion is the role of CRITFC at the Regional Forum. Kyle will share relevant information at future TMT meetings.

Priest Rapids Operations

Russell Langshaw, Grant County PUD, reported that rearing protection flows began on 3/29, and that mean daily discharges ranged from 59-108 kcfs. Flow bands ranged from 20-30 kcfs. One exceedance occurred during the weekend of April 5 due to lower flows than estimated. Russell suggested that the PUD plans to make improvements for the rest of this year's operation, and are 100% committed to the program. Vernita Bar minimums were set at 55 kcfs this year.

Action/Next Steps: Langshaw will provide an update at the 4/23 TMT meeting.

Water Management Plan Spring/Summer Update

Scott Boyd, COE, reported that the spring/summer update had been posted and is open for comments. It included April final water supply forecasts and the COE will update it with flood control elevations.

Action: The COE sent the draft in word following today's meeting. Comments should be sent in ASAP and the COE will look to finalize the Update during the 4/23 TMT meeting.

Spring Creek Hatchery Release

Dave Wills, USFWS, reported that in anticipation of the start of spill, the Spring Creek Hatchery fish will be released during the morning of April 10. USFWS, COE and BPA have been in discussions about operating the PH2 at Bonneville to the low end of 1% for 4-8 days starting on 4/11. As of today, the COE planned to implement that operation, and BPA added that they would support 4 days as a hard constraint and an additional four days (for a total of 8) as a soft constraint. The USFWS believed that 4 days would be sufficient for total fish passage but did appreciate the additional days as cushion for the fish.

Action: All TMT members present (Idaho, Montana, NOAA, BOR) were in support of the USFWS (Dave Wills), COE (Jim Adams and Cathy Hlebechuk) and BPA (Tony Norris) coordinating the details of this operation over the course of the 4-8 days, based on fish passage and other conditions. They will check in with TMT at the April 16 meeting. It was noted that gatewall work expected to begin on or near April 16 may pose a potential conflict, so it is hoped that regular operations could resume by then.

Dworshak Operations

Cathy Hlebechuk, COE, referred TMT to the ESP plots, box whiskers, comparison with volume forecast and flow augmentation volume graphics linked to the agenda. She reported that the operation has been 15 kcfs outflows to make space for expected runoff and TDG has been at around 107%. The COE planned to maintain this operation as long as necessary to create enough space in the reservoir to meet flood control targets at the end of April – given forecasts, they anticipated the 15 kcfs to continue through the month.

The salmon managers reiterated their preference to hold water for later in April, and suggested a 10 kcfs release now with an increase later in the month to coincide with the fish migration, expected to be on the later side given this year's particular conditions. They also acknowledged that the COE needs to make its decision based on several factors.

Cathy also reported that the end of April flood control target increased to 1493.7 feet (up from the previous 1463.7 feet), and explained that the previously assumed inflows came from STP while the current elevation is based on assumed average inflows (which change throughout the month). The current flood control elevation reflects a 95% confidence of refill, and the COE will evaluate this elevation daily.

Action: TMT will discuss Dworshak operations during a 4/16 TMT conference call.

Update: Cathy Hlebechuk, COE, sent an email on 4/10 notifying TMT that outflows would be reduced to 10.8 kcfs that evening.

Transportation Operations

Dan Feil, COE, followed up from the 3/26 TMT meeting on transportation operations to note that Walla Walla District will need a three-day advanced notification to get barges in place and implement start of transportation (which will begin sometime between April 20 and May 1). Paul Wagner, on behalf of the salmon managers, reiterated that they will likely recommend a later start for transportation given the later migration, cool water conditions and anticipated higher flows.

Action: This issue will be added to the 4/16 and 4/23 TMT meeting agendas.

Spring Spill Operations

Ice Harbor: The COE sent its plan of action for spill at Ice Harbor based on needed RSW repair requiring a modification to spill operations in the FOP. (This was coordinated during a TMT call on 4/2). It was anticipated that dives would finish today (4/9) and the RSW would be back in place and ready for operation on Friday. At that time, normal FOP spill operations would resume.

John Day: Spill was scheduled to begin this evening at midnight. Patterns were developed through coordination between various regional technical groups, and included patterns with and without use of TSWs. Testing was scheduled to begin on 4/26 or 4/27, with a 30% vs. 40% test that would include TSWs. Paul Wagner, NOAA, shared that more discussion is needed on when to begin the 30% spill test, that perhaps it would begin sooner. This issue will be vetted through FPOM. It was also noted that the FPP operating priority (attached to today's agenda) will be used during the test.

Action: TMT will discuss this item further at the 4/16 TMT conference call.

Bonneville Operations

BGS: Dennis Schwartz, COE, shared a BGS program status update, noting the intent of the structure is to increase guidance of yearling and subyearlings to the B2 corner collector. Acoustics need to be added to allow tests of guidance and behavior, which will require an outage at the project to install them –this work was delayed due to delays in delivery of the acoustics. The COE requested that the corner collector be closed for one day and proposed 4/16 from 7am to 6pm to do this work. There was some follow up discussion about the need for flexibility around the specific day, and whether TMT could agree to a number of hours in the event the work would need to be split between two days.

- CRITFC: Our biggest concern is numbers of fish passing the project. We are supportive of no more than a one-day outage on 4/16, unless a large number of fish are passing the project, and we would want to re-evaluate. CRITFC suggested that if more than one day would be needed, the COE scale back the number of acoustics they install in order to keep the outage to one day.
- NOAA: Agree with CRITFC, supportive of one-day outage and balance with providing the best possible passage conditions.
- USFWS: Agree with CRITFC and NOAA comments. Ok moving forward.
- BOR: Ok with the proposal.
- Montana: Ok with the proposal.

- Idaho: Wants information from the BGS and the best passage conditions possible for the fish. Suggest FPOM discuss the details and will support their decision and recommendation for moving forward.
- Oregon: Not comfortable with the operation but will not block it from moving forward.
- Washington: Not present.

Action: Dennis will contact Cindy LeFleur, Washington, to discuss the proposal and get feedback. He will vet the issue through FPOM (scheduled to meet on 4/10) and work on details of the outage. If either Washington or FPOM raised issues or concerns, the issue will be brought back to TMT via a conference call on Friday, 4/11, at 1:00 pm. Otherwise, the COE will proceed based on feedback at FPOM and report back to TMT during the 4/16 conference call. They and others will continue to monitor passage as a key factor in timing for the work.

Chum: 100 kcfs spill at Bonneville began today, 4/9. The COE noted that given the amount of water in the system, they are unable to provide both 100 kcfs and depth compensation levels for chum, which could result in elevated TDG levels above the 105% criteria for chum. The COE requested feedback from the salmon managers on how to proceed in the near term given the conditions.

Paul Wagner, NOAA, reported that while seining monitoring was not available this year, Batelle provided temperature condition measures to provide best professional judgment about if and where the chum had emerged. This information combined with known low numbers of chum this year and past years' data signaled that chum emergence has ended. Therefore, the salmon managers agreed that depth compensation constraints could be lifted and that there should be no change to spill. However, the salmon managers recommended BPA hold the tailwater at 11.5 feet minimum as a soft constraint to provide egress conditions to support fish moving through the area.

Action: Paul Wagner and Tony Norris will discuss off-line the need to provide 11.5' tailwater, and Paul will share the supporting data/rationale with Tony. In the meantime, the project will be operated as a soft constraint to 11.5 feet minimum tailwater, and 100kcfs spill will continue. Results of their discussion (and any change to the operation) will be communicated through Jim Adams, COE, to the TMT. This item will be added as an update to the 4/16 TMT conference call agenda.

TMT Guidelines

TMT members agreed to review the draft guidelines and send comments prior to the 4/23 TMT meeting, so they can be finalized at the meeting.

Emergency Action List

Tony Norris, BPA, provided an updated emergency actions list that was proposed to be added to BPA's Generating Emergency Actions Plan, and the WMP Emergency Protocols.

Action: As several questions were raised around the new list, Tony will join the next FPAC call to discuss the list with the salmon managers. TMT will revisit the list at the 4/16 conference call. It was noted that this is a living document that will be updated throughout the season.

Operations Review

Reservoirs: Grand Coulee was at elevation 1246.2' and planned to hit its target elevation of 1244.5 feet on 4/10, followed by a draft to April 30 flood control target (which would be set this week). Hungry Horse elevation was 3505.2' with 2.7 kcfs out and anticipated increase to 4.5 kcfs. Libby was at 2395.5' with 2-3 kcfs in and 4 kcfs out. Based on the April final forecast, the end of April flood control elevation was 2402.2'. Dworshak was at elevation 1496.0'. The 7-day average flows at Lower Granite were 43.7 kcfs, 130.9 kcfs at McNary and 142.8 kcfs at Bonneville. John Roache, BOR, also reported that Upper Snake flow augmentation estimates were projected to be at least 427 kaf and possibly up to 487 kaf. John Day was operating at minimum elevation for irrigation, at 262.5-264'.

Fish: Paul Wagner, NOAA, reported that daily passage of yearling chinook at McNary was 56,000 and 500 steelhead at Lower Granite. Adults at Bonneville were about 100 per day. It was noted that a pinniped report (review and updates) has been posted to the TMT home page.

Power system – Nothing to report.

Water quality – Spill over the past week has produced no TDG issues. The gas cap at Lower Monumental was increased to 35.5 kcfs. Spill was scheduled to begin on the Lower Columbia at midnight on 4/9.

Other – The COE received a request to open the TSW at McNary earlier than midnight (which would normally have happened to coincide with start of spill at the project). The COE, USFWS, NOAA and others agreed to have offline discussions about this and bring any issues back to TMT for discussion as needed.

Next TMT Meeting: April 16th CONFERENCE CALL, 9am

Agenda Items include:

- Dworshak Operations Discussion
- John Day Spill Operations
- Spring Creek Hatchery Release
- Transportation Operations
- Bonneville Operations: BGS and Other
- Emergency Actions List

**Columbia River Regional Forum
Technical Management Team Meeting
April 9, 2008**

1. Introduction

Today's TMT meeting was chaired by Jim Adams (COE) and facilitated by Robin Gumpert (D.S. Consulting), with representatives of BOR, USFWS, BPA, NOAA, COE, FPC, CRITFC, Nez Perce, Oregon, Montana, Idaho and others attending in person or by phone. 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

Official minutes for the unscheduled TMT call on April 2 regarding repairs to the RSW at Ice Harbor Dam have been posted. There were no comments on these notes in today's meeting.

(The following day, Russ Kiefer corrected the following statement in the notes, "The planned operation [at Ice Harbor] was to spill, with the spill alternating between 3% spill and 45 kcfs spill during the day and to the gas cap at night." In 2007, the dam was operated to alternate between 30% spill and BiOp spill amounts for a study, but otherwise spilled to BiOp amounts, Kiefer explained in his April 10 email. This year, the project will again alternate between 30% spill and BiOp spill amounts while the study is being conducted; otherwise, spill will be to BiOp levels.)

Regarding the February 27 TMT official meeting minutes, Jim Adams is incorporating Paul Wagner's edits to language regarding NOAA's extension of the transportation permit for this year's operation.

3. Priest Rapids Update

Chum rearing protection flows began Saturday, March 29, Russell Langshaw (Grant Co. PUD) reported. Mean daily discharges have ranged from 59-108 kcfs, with a 56 kcfs minimum and 123 kcfs maximum. Daily flow bands ranged from 20-30 kcfs; the daily delta ranged from 11.6-52.1 kcfs.

Last weekend (April 6) brought an exceedance which was the result of combined factors including lack of water. Oregon flows were 22.4 kcfs less than the weekend estimates, so Grant Co. PUD drafted until noon on Sunday, when no more water could be drafted without draining the reservoirs and flows dropped to 56 kcfs. Low flows continued into Monday, April 7. This week, flow bands are expected to be in the 20-30 kcfs range, similar to last week. Grant Co. PUD is

studying this past weekend's operations to learn how to improve future operations and remains committed to chum spawning protection. Langshaw will continue to check in at regularly scheduled TMT meetings.

4. 2008 Final Water Management Plan – Spring/Summer Update

Scott Boyd (COE) will email copies in Word of the updated version with April final forecast information to people who want to comment. (The spring/summer update is currently posted online in .pdf format.) Boyd asked people to get their comments to him in the next two weeks. The fall/winter update was finalized today. TMT will revisit this issue at its next meeting.

5. Spring Creek Hatchery Release

In anticipation of BiOp spill on April 10, the hatchery is planning the next release the morning of April 10, Dave Wills (USFWS) said. Planning for that has been discussed with the COE and BPA. The request is for the Bonneville 2nd powerhouse to operate at the low to mid level of the 1% range for 4-8 days beginning the morning of April 11, depending on passage duration.

As long as all other managers are in agreement, the COE is willing to provide that operation as it did for the March release, Dan Feil said. Scott Bettin (BPA) requested that the operation be for 4 days as a hard constraint and as a soft constraint for the remaining 4 days. This time, there will be only one release, not two like there were in March. If additional generation is needed, the turbines would be operated at the low end of 1% at the 2nd powerhouse while the 1st powerhouse is fully loaded, then the units in the 2nd powerhouse would resume operating.

This request involves a change from the Fish Passage Plan, so it requires consensus from TMT. The COE, USFWS, and BPA had previously agreed to this operation before today's meeting. NOAA, BOR, and Idaho voiced no objections in today's meeting. Montana gave an okay, with provision to check in on the operation later. The operation was planned to begin at 6 a.m. on April 11.

Adams asked Wills for specific criteria regarding passage numbers (percentage of the run) at which the operation could be suspended. The juvenile facility at Bonneville will be able to provide reliable estimates of how many fish have passed based on passage index samples. USFWS expects that 4 days will be enough, as it usually is for this run. The March release arrived at the project later than anticipated, and when the operation went off the low end of 1% after 4 days, mortalities increased. When the operation returned to the low end of 1% for 3 days, the mortalities decreased.

There was discussion of whether normal operations can be expected to resume on April 16. The Bonneville 2nd powerhouse corner collector is scheduled

to close that day, Bettin noted. TMT agreed to let the COE, BPA and USFWS coordinate the technical conditions for the release offline. TMT will review the results on its next conference call April 16.

6. Dworshak Operations

There has been kudos from TMT members and others for the new TMT web page interface and archiving link that allows access to the COE's ESP hydrographs and box whiskers plots of water supply forecasts, Harkless noted.

The April 8 ESP forecast for Dworshak shows inflows peaking at 70 kcfs inflows in late May, Cathy Hlebechuk (COE) said. Jim Litchfield noted that "discharges" on this graph actually mean "inflows"; Hlebechuk agreed that needs to be changed. Box whiskers charts refer to the same water as "inflows". The COE will fix this labeling discrepancy. Hlebechuk reminded everyone that the first 10 days of the ESP plots are deterministic and are based on National Weather Service forecasted temperature and precipitation, while the remainder of the month is based on historical temperatures and precipitation. The range of Weather Service forecasts tend to be somewhat higher than the COE's water supply forecasts.

The resulting operation at Dworshak has been 15 kcfs outflow, making space for the impending runoff, with TDG levels of around 107%. The current plan is to maintain 15 kcfs outflows until further notice to make space for the coming runoff and snowmelt. FPAC discussed Dworshak operations yesterday and voiced a preference to shape the water later in April if possible, with outflows kept at 10 kcfs now and increased later. The COE acknowledged the Salmon Managers' wishes.

The Dworshak end of April flood control elevation has been changed from 1,463.7 feet to 1,493.7 feet. Hlebechuk explained the reason for the lowered elevation target. The COE bases the April 30 target elevation on the higher of either the standard flood control elevation (in this case, 1,445 feet) or the flood control refill curve elevation, which is based on 95% confidence of refill. The initial end of April elevation of 1,463.7 feet at Dworshak assumed inflows from STP, resulting in a lower elevation. The target of 1,493.7 feet elevation assumed average inflows into the project. However, technical experts discussed the current situation and felt it was more appropriate to use the higher inflows into the project for determining the end of month elevation target. The higher elevation target then resulted in a higher reservoir level.

The current Dworshak reservoir elevation is 1,495.3 feet; the current planned operation is to maintain 15 kcfs outflows through the end of April. The COE will continue to monitor this moving target daily and is open to ongoing discussion. TMT planned a follow-up conference call April 16 primarily to address Dworshak operations.

7. Transport Operations

TMT briefly touched on this issue in its last meeting: The FOP says that if average flows at Lower Granite are projected to be above 70 kcfs from April 3 through June 20, TMT will initiate transport sometime after April 20 and before May 1. Current STP forecasts indicate that average flows at Lower Granite are 95.2 kcfs, well above the 70 kcfs trigger.

Dan Feil (COE) led a discussion of how TMT will decide on a start date for transportation. The contractor needs 3 days' notice to get barges onsite. Next week's TMT call on April 16 would be sufficient notice if TMT should decide to initiate transport on the earliest possible date, April 20. This issue will join Dworshak operations as a focal point of next week's call.

Scott Bettin wondered whether the schedule is somewhat flexible after transportation starts; Paul Wagner said yes, FPAC will track migration and river conditions before making a recommendation. At this point, the migration and runoff seem to be occurring later than usual. Transportation will therefore probably start later than April 20.

8. Spring Spill Operations

A. Ice Harbor Spill. Currently, the COE is implementing modified spill operations at Ice Harbor that depart from what's in the Fish Operations Plan. As noted earlier, there was an unscheduled conference call last week to discuss the modified operations needed at Ice Harbor to fix the seals on the RSW before passage season starts. The repairs are proceeding well, Feil reported, and it looks like FOP-specified operations at Ice Harbor will resume on Friday, April 11.

B. John Day Spill. John Day Dam as well as the other Columbia River projects will begin spilling tonight at midnight. John Day was among the last of the projects for which spill patterns were developed. The spill patterns with and without the TSWs that the Federal Facilities Design Work Group developed at ERDC last week are linked to today's TMT agenda. This includes an updated unit operating priority and spill patterns for use with and without the TSWs, following a zero daytime/60% nighttime spill regime that will start tonight and continue through April 27 when TSW testing begins. BPA, NOAA, and COE representatives worked together to develop the spill patterns.

All representatives of technical groups have received the spill patterns, Feil said. The schedule has slipped from April 21 to April 26 as a start date for the 30% to 40% treatment test that includes operating both TSWs. So far, it looks like the survival rate for the bays with TSWs is excellent, around 99% as compared to almost 100% for a regular bay. The link also includes unit operating priority. John Day spill will be on the agenda for next week's conference call.

9. Bonneville Operations

A. Bonneville 2nd Powerhouse Corner Collector Outage. The 720-foot-long, 10-foot-deep behavioral guidance structure (BGS) installation in the Bonneville forebay was completed on March 29, Dennis Schwartz (COE) reported. The intent of the BGS is to increase guidance of yearling and subyearling Chinook away from a corner eddy where they were getting stuck and into the Bonneville 2nd powerhouse corner collector for safe passage. Historical guidance rates for many years before installation of the BGS were 33% for yearlings; 39% for subyearlings; and 77% for steelhead.

The next step is installing acoustic nodes along the BGS to monitor fish passage, Schwartz said. A corner collector closure of 1 day only on April 16 is required to install the nodes on the back of the BGS. The COE requested the right to extend the date to April 17 if necessary, while emphasizing that it would be a 1-day outage only. A bulkhead crane will be on site to open and close the corner collector at 7 am and 6 pm respectively, keeping the corner collector closed during nighttime passage. Any fish in the area will be bypassed in the evening. Because this operation deviates from the Fish Operations Plan, it needs complete concurrence from TMT to move forward.

CRITFC supported a 1-day outage to obtain observations of whether the BGS is effective. BPA supported a 12-hour window possibly spanning 2 days, but not an outage of 2 full days. Likewise, NOAA and CRITFC supported an outage of 1 day only. Idaho preferred to let FPOM discuss how best to collect the needed information and provide the planned passage conditions; NOAA supported the idea that FPOM is a good forum to discuss this. BPA, BOR and Montana agreed to this operation. USFWS also assented with the same caveats mentioned by NOAA and CRITFC regarding FPOM's role. There will be more offline coordination of this issue. In summary, all TMT members (except Washington) assented to a 1-day outage in support of the BGS evaluation, while expressing equal support for fish passage conditions. Schwartz will contact the Washington representative to obtain her input on the proposed outage, then follow up with the COE internally. If Washington accepts the outage, it will proceed as planned.

A tentative call was scheduled for April 11, at 1 pm after FPOM has had an opportunity to discuss the outage and the Washington representative's vote is on record. (The call did not take place.)

B. Chum Protection Flows. Spill of 100 kcfs for 24 hours a day begins at Bonneville today at midnight. There is also a tailwater restriction below Bonneville to protect the chum redds. Spilling 100 kcfs will produce some gas, and based on the amount of water available, the COE probably won't be able to provide depth compensation, Feil said. Adams added that TDG levels at

Warrandale gage will probably be around 118%, which is approximately 13% above the state water quality criteria of 110% total dissolved gas. This would require a minimum tailwater elevation at Tanner Creek of 15.5-16.5 feet in order to provide sufficient depth compensation to meet Oregon TDG criteria for redds at the 11.5 foot elevation, and there are not enough water available to accommodate that.

TMT discussed the options, including backing off on spill from 100 kcfs to a minimum of 50 kcfs which would produce less gas and meet the needed tailwater levels. Based on NOAA's emergence data from Battelle Laboratories, emergence should be well done by now, Paul Wagner said. He showed TMT relevant data on the Fish Passage Center website which identifies December 29-February 21 as a range for the beginning and end of spawning. The summary report of this information hasn't been produced yet, Wagner said. That's where more formal analysis is needed.

NOAA's recommendation is that the tailwater restriction be lifted because chum emergence is complete. However, NOAA recommended maintaining a minimum tailwater elevation of 11.5 feet for migrating fish in other areas. Oregon did not object to the operation for this year because emergence apparently is done, and depth compensation is no longer needed. Oregon concurred with NOAA's request for a minimum tailwater elevation of 11.5 feet.

BPA expressed reservations about having an 11.5-foot minimum tailwater restriction in place at night when power production drops, and requested that the restriction be dropped if emergence is complete. NOAA and BPA representatives will communicate offline regarding the potential for stranding and egress issues if flows decline.

Beginning April 1, there's a 4-foot daily limit and an hourly 1-foot limit to fluctuations in effect until the end of September to smooth water elevations below Bonneville Dam, Rudd Turner pointed out. Stranding issues might be resolved by that. TMT agreed to a soft constraint until more offline discussion happens. In the meantime, the planned operation is to begin spilling up to 100 kcfs of spill to the spill cap at Bonneville Dam. The chum have emerged, but a soft constraint of minimum 11.5 foot tailwater remains in effect until TMT hears otherwise. Montana, Idaho and BOR concurred with this operation.

10. TMT Guidelines

The original TMT guidelines were approved in 2003. Recognizing they are out of date, last March several TMT members discussed the guidelines outside of TMT. They crafted language regarding the role of the Water Management Plan and System Operational Requests, but TMT hasn't had an opportunity to finalize the language. A draft version of the guidelines is linked to today's agenda showing language changes and an updated TMT member list. TMT members

agreed to review the changes to the guidelines and the member list in time to discuss these documents at their April 23 meeting.

11. Emergency Action List

Tony Norris distributed hard copies of BPA's emergency action list, dated 31 March 08, which prioritizes actions that would be taken in the event of a power emergency. The list is an appendix to BPA's emergency protocols and generation emergency action plan, as well as to the COE's Water Management Plan. Norris asked TMT to review the list and the Salmon Managers in particular to focus on changed priorities relative to the TSWs that were recently installed at McNary and John Day dams.

FPAC has discussed this and wondered what other steps prior to this had been taken before declaring a NERC alert, Wagner said. He noted that the current request to operate turbines at Bonneville at the low end of 1% efficiency is inconsistent with priorities on this list. Kruger expressed a similar reluctance to finalize and post the list. Norris and Wagner agreed to coordinate with FPAC and report back to TMT on the April 16 conference call. This list will need to be updated many times per season, Bettin noted.

12. Operations Review

a. Reservoirs. Grand Coulee is at 1,246.2 feet elevation, on track to meet the objective of 1,244.5 feet tomorrow, April 10. Then it will start drafting toward the April 30 flood control target elevation, which is now 1,229 feet based on the March forecast. The April forecast will probably change the target elevation slightly.

Hungry Horse is at elevation 3,505.2 feet, discharging 2.7 kcfs to meet the Columbia Falls minimum. Discharges will be increased to around 4.5 kcfs starting on April 10th. The final April water supply forecast predicts an April to July volume of 2,082 kaf, which is 104% of normal.

Libby is at elevation 2,395 feet, with inflows ranging from 2-3.4 kcfs over the past few days. Outflows are being maintained at 4.0 kcfs. The end of April flood control elevation is 2,402.2 feet.

John Day is starting MOP operations at elevations ranging from 262.5-264 feet.

Dworshak (already discussed at length) is at elevation 1,496 feet with outflows of 15 kcfs and inflows of 3 kcfs.

The 7-day average for inflows at Lower Granite is 43.7 kcfs. The 7-day average for inflows at McNary is 130.9 kcfs. The 7-day average for inflows at Bonneville is 142.8 kcfs.

b. Fish. Juveniles have begun to migrate into the Snake system, Wagner reported. Counts at Imnaha are 6,000 fish per day, possibly due to a hatchery release. Grande Ronde counts are 500 fish per day. McNary counts are 56,000 fish per day due to a hatchery release. Steelhead passage at Lower Granite is averaging 500 fish per day. Subyearling passage has trailed off to a trickle, while adult passage is not yet fully in motion.

c. Power System. There was nothing to report.

d. Water Quality. Spill on the Snake has been happening for a week, but flows are too low to create gas problems, Adams reported. The spill cap for Lower Granite was 41 kcfs to start; for Little Goose, 32 kcfs; for Lower Monumental, 27 kcfs; and for Ice Harbor, 95 kcfs.

On Sunday, the COE increased the spill cap to 32 kcfs at Lower Monumental in anticipation of gas from spill, but apparently wind has been stripping the gas from the water. The COE will raise the gas cap at Lower Monumental to 35.5 kcfs today. Meanwhile, spill begins tonight on the Lower Columbia River. Spill caps will start at 145 kcfs for McNary, 120 kcfs for John Day, 125 kcfs for The Dalles, and 100 kcfs for Bonneville.

There was brief discussion of whether spill should start at midnight or during the afternoon on the lower Columbia. Representatives of BOR and Idaho deferred to NOAA, BPA and the COE on this issue. It appears that providing the training spill this operation would require could be a problem. NOAA, COE, BPA and USFWS will work out the details and notify TMT of the resulting operation via email.

7. Next Meeting

TMT scheduled an April 16 TMT conference call with a full agenda – a follow-up on Dworshak operations, transportation operations planning, John Day spill patterns, the Bonneville minimum tailwater elevation, and the BPA emergency actions list. The next regular TMT meeting will be on April 23; that agenda will include the TMT guidelines and the WMP spring/summer update. This summary prepared by consultant and writer Pat Vivian.

Name	Affiliation
Tony Norris	BPA
Paul Wagner	NOAA
Jim Adams	COE
John Roache	BOR

Tina Lundell	COE
Randy Wortman	COE
Cathy Hlebechuk	COE
Bob Buchholz	COE
Scott Boyd	COE
Tim Heizenrader	Cascade
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