

# COLUMBIA RIVER REGIONAL FORUM

## TECHNICAL MANAGEMENT TEAM

March 17, 2010

### FACILITATOR'S SUMMARY NOTES

Facilitator: Erin Halton

Notes: Christa Leonard

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 Meeting Minutes for March 3<sup>rd</sup> and 10<sup>th</sup>, 2010**

Paul Wagner, NOAA, had some changes to the March 3<sup>rd</sup> official meeting minutes:

- Page 8, under Chum Emergence Update section, paragraph two, last sentence: "several miles" should be changed to as "100 miles." In paragraph four: "per the BiOp" should read "per the Vernita Bar Agreement."
- Page 10, under Transport Update section, in the first paragraph, fourth sentence: "April 3<sup>rd</sup>-May 1<sup>st</sup>" should be changed to "beginning April 3<sup>rd</sup>". The last sentence in the paragraph should be changed to read "no spill at collector projects in the Snake River during spring migration season."

No other changes to the facilitator's summary or official meeting minutes were made and both sets will be considered final.

#### **The Dalles Spillwall Update**

Steve Barton, COE, reported that the project passed final inspection on Thursday. Barton reported that there was a minor repair at The Dalles that required time to cure, but normal operations should be restored on by 3/18. Bonneville operations had already returned to a normal range.

#### **Updated Weather and Flood Control Forecasts**

Steve Barton, COE, announced that the mid-month update is due out 3/18. The March final forecast assumed precipitation to be 75% of normal for the remainder of March, but Barton reported that the Basin as a whole is at 64% of normal precipitation as of March 15 for the Columbia River above The Dalles. Barton referred TMT to SNOTEL data (posted as a link to the agenda) reporting levels below to much below normal (50-80% of normal) through the entire basin. The outlook calls for temperatures to remain above normal and precipitation to remain below normal.

Kyle Dittmer, CRITFC, shared an update from the NOAA Research Center in Boulder, CO, reporting that El Niño will continue its peak through spring. He noted that historically, an El Niño peak has not been this late since the 1950's.

### **Water Management Plan Spring/Summer Update - Comment Deadlines**

Steve Barton, COE, advised TMT members that the initial draft has been posted to the TMT site. He encouraged TMT members to provide feedback and outlined a proposed comment period including intermediate deadlines. The initial comment deadline is set for April 10<sup>th</sup>. The COE requests that the bulk of the substantive comments be submitted by this date if possible. A revised draft will be shared by the COE by April 30<sup>th</sup>. A final comment period will be open until May 7<sup>th</sup> and the final draft will be shared on May 15<sup>th</sup>. There were no comments/ questions from the group regarding this process.

**Action/Next Steps:** Substantive comments can be sent to Doug Baus and Steve Barton. Comments should be submitted in a word document with redline formatting.

### **Chum Emergence Update**

Paul Wagner, NOAA, directed TMT to Ives Island data, posted as a link to the agenda. He explained the results of the three gauge readings; gauge number one hit the targeted 825 10 days ago, gauge number two hit the targeted 825 on March 15<sup>th</sup> and is now above 900, gauge number three hit the targeted 825 on March 16<sup>th</sup>. He reminded TMT of the agreed upon step down scenario at Bonneville. On Monday March 15<sup>th</sup>, operations moved to 11.0' tailwater elevation. On Wednesday March 15<sup>th</sup>, operations moved to 10.8' and on Friday March 19<sup>th</sup>, operations are scheduled to move to 10.5' tailwater elevation, finally transitioning to Vernita Bar minimum operations on Monday March 22<sup>nd</sup>.

Wagner noted that the next issue facing chum is maintaining connectivity at Hamilton Spring and Hamilton Creek. Though he does not expect any issues, he is organizing monitoring surveys over this weekend, when the salmon managers and others will physically visit the sites to observe and verify whether there are any connectivity issues during low flow conditions. The group discussed the relation between tailwater elevation and connectivity and some options for controlling any connectivity issues that may arise, such as shaping the draft at John Day to maintain desired tailwater levels. Steve Barton, COE, reminded TMT that there may be opportunities during upcoming scheduled maintenance times when water may be available; he will check internally with the COE for upcoming options for water flexibility. Tony Norris, BPA, said that BPA would like to know of any upcoming constraints as soon as possible.

**Action/Next Steps:** NOAA, along with USFWS and WDFW, will survey the Spring/Hamilton Creek areas over the weekend and early next week and report any issues to TMT as quickly as possible. TMT will discuss updates on this item during a conference call on 3/24.

### **Hanford Reach Update**

Russell Langshaw, Grant County PUD, reported to TMT that rearing protection flows began on March 3<sup>rd</sup>. He reported that temperatures are warmer and flows lower than normal. Since March 3<sup>rd</sup>, there have been eight 20 kcfs restriction days and four 30 kcfs restriction days.

**Action/Next Steps:** Langshaw will present updated fall Chinook emergence data at the TMT meeting on 3/31.

## **2010 Operations**

Steve Barton, COE, reported on the following:

- **B2CC Operations:** Barton followed up on an email to TMT members earlier in the week by reporting that the B2CC had just been re-opened at 8 am on 3/17, but the ice and trash sluiceway and spillbays 1 and 18 will remain closed. Barton clarified that the COE will monitor the TDG levels closely if they exceed 105%, the COE will shut off the B2CC. He said it is uncertain whether the attraction flows will be turned back on and said that it will be a very dynamic operation between now and April 1, when the TDG waiver goes into effect. TMT members noted that this issue is being discussed at FPOM and FPAC, and there is some question as to whether there is a significant problem with adult passage without the attraction flows in effect. The COE stated that they are trying to manage the project the best they can to support migration and suggested that TMT could revisit this item during a conference call on 3/24. **Action:** TMT will discuss this item during a conference call on 3/24.
- **Low Flow Spill Operations:** Barton reported on the latest STP runs for Lower Granite, which indicated flows are likely to stay in the mid-20 kcfs range as the spill season begins; this means Little Goose will likely enter the season with the spillway weir closed, and will spill according to Table LGS-12 in the Fish Passage Plan (FPP). **Action:** Russ Kiefer, ID, reported that FPAC is coordinating a draft recommendation/FPP change form to provide better conditions for fish passing the project, which will be vetted with FPOM before it is submitted to the COE.

Additionally, the COE gave TMT a head's up that early-mid April inflows at McNary look to be in the range of 92-100 kcfs, which will mean that spill will likely be in the 35-40 kcfs range. Early-mid April inflows at Bonneville look to be in the range of 105-155 kcfs range, which will mean that spill will likely be in the range of 70-75 kcfs.

The COE also clarified that modeling for Priest Rapids flows and targets for April assumed that Vernita Bar minimums would be in effect until about April 20. BPA said the flow objective is 135 kcfs for April 10-20 (the minimum flow is 60 kcfs per the Vernita Bar Agreement.) **Action:** The Salmon Managers will discuss this item and if they have ideas for a different recommendation, they will send it along to the Action Agencies.

- **Lower Snake River Drafting to MOP:** Barton reported that the COE is targeting April 3<sup>rd</sup> for drafting the Lower Snake River projects. In 2009, Little Goose operations were able to maintain MOP/ MOP + 1; so far for 2010, indications are that the project should be able to maintain MOP/MOP+1 as well, and discussion with Walla Walla District staff will be ongoing. Paul Wagner, NOAA, noted that

MOP operations have been discussed at FPAC and said that if the COE identifies any bump/volume of water that could be passed at a time that would support spring migration, to please share that with TMT as soon as possible. TMT members, including the COE, were open to the idea of discussing a potential push back of the April 3<sup>rd</sup> date, which would be possible if there was consensus amongst all TMT members. **Action:** This issue will be revisited next week during the 3/24 TMT conference call.

### **2010 Initial Spill Priority List**

Scott English, COE, directed TMT to two documents, both posted as links to the agenda. He described the first, Setting Spill Priority, as guidance to spring spill priority and the second, Revised Spill Priority List, as a proposed list that has been reviewed by the RCC fish unit. Steve Barton, COE, clarified that these documents are not yet final and that there are edits expected. Paul Wagner, NOAA, reported discussing spill priority with the mid-Columbia coordinator, who suggested spill at the lowest project (Priest Rapids) first. Tony Norris, BPA, reminded TMT members to also review the Emergency Actions List, which is an appendix to the Water Management Plan.

**Action/Next Steps:** FPAC will discuss these lists at their next meeting, and TMT will discuss them at the next face-to-face meeting on March 31<sup>st</sup>.

### **Transportation Update**

Paul Wagner, NOAA, reported that reports from NOAA and Oregon were submitted to the ISAB on 3/12.

**Action/Next Steps:** The ISAB will review the information and their comments are expected back by April 9th. For those who are interested, the presentation is on the ISAB website.

TMT will continue to track and discuss this issue at future meetings.

### **Operations Review**

Reservoirs: Grand Coulee was at elevation 1276.3' and meeting chum needs until next Monday 3/22 when operations will transition to Vernita Bar minimums. Hungry Horse was at 3521.4', with 2.4 kcfs outflow. Libby was at elevation 2404.48', with 2.5 kcfs inflows and 4.0 kcfs outflows (on minimums with slow but steady draft.) Albeni Falls was at 2015.69' and passing outflows of 10.2 kcfs. Dworshak was at elevation 1520.34' with inflows of 2.0 kcfs and outflows of 1.2 kcfs (on minimums, slowly filling.) Lower Granite inflows were at 23.7 kcfs, McNary inflows were at 92.6 kcfs (averaging just under 100 kcfs.) and Bonneville inflows were at 117.3 kcfs (averaging 120 kcfs.)

Fish Paul Wagner, NOAA, directed TMT to the Fish Passage Center's smolt data/ two week passage index. He reported for juveniles: smolt traps are catching some migrating wild and hatchery fish and passage numbers have been in the 20 per day range for the past week (still early in the season.) Subyearlings were in the 500 per day range, with no hatchery releases yet. Coho passage numbers were in the 30 per day range. Adults were seeing 2-9 Spring Chinook per day at Bonneville (seven passed the project on 3/16.) Steelhead were looking a bit above average so far, in the range of 100-140 per day.

Power Tony Norris, BPA, noted that the installed wind capacity has increased to 2780 megawatts. TMT looked at tracking information on a 7-day generation data graph posted on the BPA wind generation site linked to the TMT homepage.

Water Quality: Scott English and Laura Hamilton, COE, noted that forebay gauges are being prepped for spill season. Steve Hall, COE, noted that TDG spiked over 110% at Dworshak on 3/16. Generation was increased by 0.4 kcfs to try and control levels (increasing generation decreases gas). Operators are not sure what caused the spike. Temperature and spill data will be analyzed and gauges checked and monitored for more information.

English and Hamilton walked TMT through the new RCC Water Quality Program website. They noted the Oregon, Washington, and OR/WA combined reports to account for the different standards and reporting processes specific to each state. Hamilton explained that OR uses the highest hour reading and Washington uses a running/ consecutive 12 hour average. They shared that the site contains data on six major water quality categories: Policies, Meeting Summaries, Water Quality Plans, Reports, Spill Plans and other general information.

**The next TMT meeting will be:** a conference call on **3/24 at 9:00am.**

Agenda items will include:

- B2 Corner Collector Status
- Lower Snake Drafting to MOP

**The following TMT meeting will be:** a face-to-face **3/31 at 9:00am at the COE.**

Agenda items will include:

- Notes Review
- Updated Weather and Flood Control Forecasts
- Chum Surveys re Connectivity
- 2010 Operations
- Spill Priority List/ Emergency Actions
- TDG Instances/ Definition Changes
- Priest Rapids Update
- Operations Review

**Columbia River Regional Forum  
Technical Management Team Meeting  
March 17, 2010**

**1. Introduction**

Today's TMT meeting was chaired by Steve Barton (COE) and facilitated by Erin Halton (DS Consulting) with representatives of BOR, COE, Washington, CRITFC, USFWS, Idaho, Montana, NOAA, BPA, Oregon and others present. The following is a summary (not a verbatim transcript) of the topics discussed and decisions made. 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 March 3 and 10**

Paul Wagner (NOAA) made three changes to the March 3 official minutes:

(1) In the Chum Operations Update, page 8, 2<sup>nd</sup> paragraph, the last sentence should read: "The other large spawning area for chum is at the Grays River, separated from Ives Island by about 100 miles."

(2) Also in the Chum Operations Update, 4<sup>th</sup> paragraph, the first two sentences should read: "Another consideration is providing Vernita Bar protection flows. These can drop to 55 kcfs or no more than 50% of prior protection levels per the Vernita Bar agreement."

(3) In the Transport Update, page 10, 1<sup>st</sup> paragraph, the fourth sentence should read: "The BiOp says that when total river flows go below 65 kcfs, transportation should begin on April 3, with no spill during the spring migration season." Jim Litchfield (Montana) amended the sentence to read: "The BiOp says that when total river flows go below 65 kcfs, transportation should begin on April 3, with no spill at collector projects during spring migration season in the Snake River." These changes will be made and the notes reposted.

**3. The Dalles Spill Wall Update**

The completed wall passed final inspection on March 11, Barton reported. On March 12, the project manager asked the COE to terminate the deviation request allowing a high forebay elevation at Bonneville to facilitate spill wall construction.

The old wall at The Dalles was recently damaged by a barge, and spill will be turned off until the repair is completed on March 18.

**4. Updated Water Supply and Flood Control Forecasts**

The COE will release an updated water supply forecast on March 18. The March final forecast assumed 75% of normal precipitation, but as of March 15,

precipitation averaged only about 64% of normal throughout the Columbia basin. The drop could nudge the water supply forecast even lower. The January final water supply regression forecast for March was 71.8% of normal. By comparison, as of March 15, precipitation from Grand Coulee to The Dalles was only 64% of normal, and 63% of normal above Grand Coulee.

Snowpack continues to be below or significantly below normal throughout the basin – 50-67% of normal in northern Idaho and western Montana, and 50-85% of normal elsewhere. In Canada, the Kootenai River basin snowpack is 60% of normal, while the upper Columbia basin is 77-83% of normal. Only the extreme north near Mica Dam has a near-normal prediction of 97%.

Kyle Dittmer (CRITFC) said the latest meteorological information is similarly discouraging. The multi-variable ENSO index shows the El Nino trend increasing, which hasn't happened since the winter of 1957-58. Unless there's a major shift, conditions don't look good for spring migrants.

### ***5. Water Management Plan Spring Comment Deadlines***

Barton proposed and TMT agreed to the following schedule for review of the draft WMP spring/summer update. Email comments to Doug Baus and cc: Steve Barton.

- **April 10** – Comments due on draft WMP spring/summer update, available at the TMT website in both PDF and Word format. Redlined comments are welcome. The COE wants all substantive comments by this deadline.
- **May 7** – Second round of comments due on revised draft.
- **May 15** – Final WMP spring/summer update posted to the TMT website.

### ***6. Hanford Reach Update***

Russell Langshaw (Grant PUD) gave his first report of the season on protection flows at Priest Rapids Dam. With temperatures warmer than usual, emergence began unexpectedly early, and rearing operations began on March 3, a few days after emergence. Spawning is still in its early stages. Since March 3, there have been 8 days of 20 kcfs flow restrictions and 4 days of 30 kcfs restrictions. Langshaw will provide another update at the March 31 TMT meeting.

### ***7. Chum Emergence Update***

Paul Wagner (NOAA) presented data, linked to today's agenda, from the three gages being used to monitor accumulation of temperature units in the Ives Island spawning area. Gage 1 recorded 825 TUs on March 7; gage 2 recorded 825 TUs on March 5; and gage 3 recorded 825 TUs on March 16. Accumulation of 825 TU's provides a relative estimate of when emergence should occur.

The peak spawning count was 100 chum in the Ives Island area and another 200 in the Hamilton Creek/Hamilton Springs area. Following the step-

down schedule TMT adopted in last week's call, the Bonneville tailwater elevation dropped to 11 feet on March 15 and to 10.8 feet today. On March 19, it will drop again to 10.5 feet in an effort to conserve water for spring migrants.

With chum emergence still in progress and elevations declining, NOAA developed an informal tag team to monitor the connectivity of Hamilton Springs and Hamilton Creek to the mainstem Columbia River. The creek – which is also subject to tidal effects – is expected to remain connected to the river, but that should be verified. Further coordination of monitoring by NOAA, USFWS and the state of Washington will occur at FPAC meetings.

Although the Bonneville tailwater elevation for chum is unsustainable, the COE might have opportunities to schedule water releases between now and April 10 for maintenance needs so they coincide with fish needs, Barton noted.

BPA needs to know the operating constraints for fish after March 22 in order to respond most effectively, Tony Norris (BPA) said. He asked that tailwater elevations and times be recorded during the Hamilton Creek site visits. TMT will discuss the chum operation again on March 31.

## **8. 2010 Operations**

**a. Bonneville 2<sup>nd</sup> Powerhouse Corner Collector.** Barton reported that on April 14, the trigger for opening the corner collector was reached – 2 kelts observed per day for 2 consecutive days, plus a total of 20 fish at the 2<sup>nd</sup> powerhouse behavioral guidance structure.

The COE opened the B2CC on April 14, and the Warrandale gage read 105% TDG. Shortly after the B2CC opened, gas levels rose above the 105% state standard, and the COE shut off attraction flows in bays 1 and 18 as well as the ice and trash sluiceway. Nevertheless, gas levels continued to climb. On April 16 at 10:42 am, the COE closed the corner collector. The project operated on a 2<sup>nd</sup> powerhouse priority throughout this period.

This morning the Warrandale gage reading was down to 103% TDG with attraction flows turned off and the sluiceway closed, so the COE opened the corner collector again at 8:15 am. The sluiceway and attraction flows remain off. Operating the corner collector by itself tends to raise gas levels by 2-3%, so that operation might be sustainable. The COE will check in 24 hours to ensure that gas levels remain below the 105% state water quality standard, which will be in effect until April 1 when the spill waiver kicks in. If gas levels exceed 105% before April 1, the corner collector will be closed and TMT will consider next steps.

Whether attraction flows are turned back on remains to be seen, Barton said. Previously the salmon managers agreed to a tradeoff: Stop attraction flows for adults migrating upstream if needed to keep the corner collector open for kelts. Scott Bettin (BPA) said it's possible to provide attraction flows from just bay

1 or 18, not both. Russ Kiefer (Idaho) said an important consideration is whether spillway attraction flows are needed for adult passage; Idaho places a high priority on not delaying adults. Despite the warmer weather, this year's runs don't appear to be passing early, Cindy LeFleur (Washington) said. Kiefer suggested turning attraction flows back on if the B2CC must be closed again.

Scott English (COE) showed TMT members how to monitor whether the B2CC is operating at any given time. From the RCC water quality link on the TMT page, go to historical water project data, then pull up the chart for Bonneville. If flows are above 5.9 kcfs, it indicates the B2CC is operating. Attraction flows from bays 1 and 18 account for 2.4 kcfs.

TMT scheduled a potential conference call on March 24 to revisit this issue, with email updates to TMT members in the interim if needed.

**b. Low-Flow Spill Operations.** We can expect flows in April 2010 to be characteristic of the low flows of summer, Barton said. McNary and Bonneville dams will be most affected, but other project operations will be affected as well.

One of these is Lower Granite. Current STP traces suggest that inflows in April will remain around 25 kcfs. This raises concerns about the Little Goose operation downstream, where low flow conditions require toggling back and forth between 1 and 2 units within 1% peak efficiency for the sake of navigation.

This spill regime in table 13 of the 2010 Fish Passage Plan allows for the full range of spill down to zero at Granite if flows are low. This issue is still unresolved at FPOM, and Idaho doesn't accept the operation shown in table 13. FPAC is in the process of drafting a change form to the FPP to address the situation, Kiefer said. The draft will go to the COE and FPOM for review. Then FPOM will schedule a conference call to discuss it prior to their next regular meeting April 15. FPOM's primary focus is on how to use the surface weir most effectively under low flow conditions.

Ice Harbor will be on minimum generation, spilling just at or under its 45% daytime spill level. It's too early to tell whether the required operation will be impeded by low flows. In the lower Columbia, the FOP gives McNary a general requirement of 50 kcfs flows through the turbine and a 50% spill operation. The threshold for being able to fully implement the required operation is around 105 kcfs. This, too, will be a close call. Bonneville faces a similar touch-and-go situation, with a low minimum requirement of 30 kcfs through the turbines. The Bonneville operation calls for 100 kcfs spill, but it's looking like flows will be only 72 kcfs, leaving the project spilling as much as it can, subject to inflows.

Norris asked, will Vernita Bar flows be provided through the end of March? Will the salmon managers recommend a particular flow rate until mid-April? One of the COE modeling assumptions is running Vernita Bar flows until April 20, Barton replied. The Vernita Bar agreement requires 60 kcfs to maintain established redds. BPA could operate to provide 60 kcfs at Vernita Bar for the

rest of April unless the salmon managers request a change, Norris said. However, the flow objective of 135 kcfs from April 10 to the end of the month won't be achievable this year without dramatic effects at Grand Coulee. According to a single trace model, the projected Grand Coulee elevation for the end of April is 1,270 feet under the current operation – about 8 feet below the flood control elevation of 1,283 feet.

Wagner suggested shaping as much water as possible into May to boost spring flows for both Columbia and Snake River juvenile migrants. Typically the salmon managers recommend increased flows in April for mid Columbia steelhead. Prime time for mid Columbia steelhead is typically at the end of April and in May.

**c. Lower Snake Drafting to MOP.** The COE is targeting minimum operating pool elevations starting April 3 on the four lower Snake River projects. In August 2009, the COE was able to maintain a MOP to MOP+1 operation at Little Goose. The newly installed gage is being recalibrated to verify river depth over the sill with a high degree of accuracy.

Because the April 3 start date for MOP operations is specified in the FOP, a delay would require unanimous TMT agreement. Lower Monumental and Ice Harbor dams will have lock outages until March 27, Kanbergs noted. There may be opportunities to coordinate operations and get the most out of available flows by shaping the available water into pulse mode, Barton said. TMT will revisit MOP operations on the Lower Snake during its April 24 conference call.

## ***9. 2010 Initial Spill Priority and Emergency Actions Lists***

Scott English showed TMT two COE documents regarding spill priorities, linked to today's agenda. The first document guides RCC in establishing spring spill priorities at the projects. A preliminary version of the 2010 spring spill priority list is posted for TMT's review.

Norris asked TMT members to review the BPA emergency actions list, part of the generation action plan. TMT will discuss both lists on March 31.

## ***10. Transport Update***

On March 12, Wagner said, NOAA, USFWS and Oregon made presentations to ISAB regarding their transport findings. The presentations are available online, linked to the ISAB March 12 agenda (under the ISAB tab on the Northwest Power and Conservation Council's website). Litchfield spotlighted a NOAA analysis, based on SARs from 2007, that showed no spill in May cut steelhead returns in half, from 92,000 to 46,000 adults. Poor ocean conditions would exacerbate the negative effects of no spill.

On April 9, ISAB will issue a report based on the agency information, Wagner said. According to Wagner, default mode is to spill in May. If the ISAB

recommends maximum transport in May this year, NOAA will present the recommendation to RIOG and TMT for review. TMT will revisit this after ISAB releases its report April 9.

## **11. Operations Review**

**a. Reservoirs.** Grand Coulee is at elevation 1,276.3 feet, meeting the stepped-down chum operation until March 22, when it will transition to Vernita Bar protection flows. The elevation has been around 1276.3 feet for the last 4-5 days.

Hungry Horse is at elevation 3,521.4 feet, well below its end April flood control elevation of 3,555 feet. Discharges are around 2.4 kcfs. The March final forecast is for a March-July inflow volume of 1,465 kaf. Libby is at 2404.48 feet, with inflows of 2.5 kcfs and a minimum discharge of 4 kcfs, still below the flood control rule curve. Albeni Falls is at elevation 2,051.69 feet, discharging 10.2 kcfs. Dworshak is at 1,520.34 feet and filling slowly, with 2 kcfs inflows and 1.2 kcfs outflows.

Lower Granite inflows are 23.7 kcfs, and McNary inflows are 92.6 kcfs. Bonneville is discharging 117.3 kcfs.

**b. Fish. Juveniles:** Passage counts are around 20 fish for the past week at the White Bird and Imnaha traps, Wagner said. These are wild and hatchery fish from tributaries. Approximately 500 subyearling Chinook and 30 coho are passing Bonneville per day. Yearling Klickitat, probably hatchery releases, are passing at the rate of about 1 per day.

**Adults:** Spring Chinook passage apparently dropped by 20% when attraction flows were shut off at Bonneville. Steelhead passage numbers of 140 per day are higher than usual. About 100 steelhead per day, both A-run and B-run fish, are passing Lower Granite Dam.

**c. Power System.** Wind generation capacity is up to 2,780 aMW, 6 times the generation capacity of Bonneville Dam, Norris said. However, only 2-300 aMW of that capacity is BPA-owned. Most wind generation is scheduled for service outside BPA's balancing authority area.

**d. Water Quality.** On March 16, TDG levels in the Dworshak tailrace spiked over 110%, and the COE immediately increased generation to 1,200-1,600 cfs for a few hours to curtail gas production, Steve Hall (Walla Walla) said. Discharges from Dworshak might fluctuate until the exact nature of the problem is clear. Until the TDG spike, Dworshak was releasing as little water as possible, which causes the turbine valves to suck in air in so the turbines won't be exposed to negative pressure. There's a strong possibility that increasing discharges will bring the TDG levels down.

Scott English and Laura Hamilton (COE) gave TMT a virtual tour of the RCC's redesigned web page, linked to the TMT page. The new water quality site houses all the tools the RCC uses to manage water quality in the Northwest. English and Hamilton pointed out several links of potential interest to TMT.

Spill Review Information: The fourth link under this heading shows in bold, at any given time, the most stringent TDG values to which the COE operates the projects. Other links show the individual state water quality standards for Washington and Oregon, which differ significantly due to recent changes. The COE always operates the projects to the most restrictive standard.

In 2006, Washington changed its definition of a TDG exceedance to a consecutive 12-hour reading instead of a rolling average. This extends the TDG reporting period to 35 hours and can lead to double-reporting of the same incident on consecutive dates. In 2009, Oregon removed the 115% forebay requirement from its water quality standard, so the Oregon web report lists only tailwater gage readings.

Other Documents Related to TDG Management: The RCC site includes links to information on TDG policy documents, meetings, plans and reports, as well as how the COE plans to manage gas levels at each project. An annual TDG and temperature report summarizes RCC spill programs and gives field information relative to requirements for each project. A spill change guidance document explains how the COE plans to manage spill each year. There's also an overview of the TDG monitoring system.

Data Query: Near the bottom of the RCC page is a data query link, a powerful tool that allows users to request information they can't find elsewhere.

## **12. Next Meeting**

The next TMT meeting will be a possible conference call March 24, followed by a meeting in person March 31. This summary prepared by technical writer Pat Vivian.

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