

COLUMBIA RIVER REGIONAL FORUM

TECHNICAL MANAGEMENT TEAM

February 23, 2011

FACILITATOR'S SUMMARY NOTES

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 Meeting Minutes/Notes

TMT members provided two comments on the February 9 Official Minutes:

- Under the Dworshak discussion (page 6), language TDG impacts needs to be clarified. **Action:** Steve Hall, Walla Walla District, will email language corrections to the COE Division office for inclusion in the revised notes.
- Under the Pinnipeds report, the task force was a ‘multi-entity’ task force (not a ‘state’ task force).
- With the above corrections, the February 9 notes were considered final.

Vernita Bar Update

Russell Langshaw, Grant County PUD, provided an update on Hanford Reach protection flows operations, which he said were scheduled to begin on 2/26. The figure he provided plotted the current and historical temperatures and predicted the start and stop of the operation. Russell said he would provide updates to TMT as the operation progressed. Additional information can be found on the Grant County PUD website, which was included as a link to the file posted to the TMT agenda. Russell concluded by saying this year had seen warmer than average temperatures but that they were returning to normal. Given this, it was anticipated the protection operation would likely end sometime the second week of June.

Fish Operations Plan

Dan Feil, COE, shared information about the draft Spring Fish Operations Plan (FOP) and John Day white paper that were posted to the TMT agenda late on 2/22. The white paper summarizes three years’ of evaluations of spill tests at John Day and is being used to inform the Spring spill plan proposal for the project. John Day spill, he said, was the only proposed change to spring spill operations from 2010 – the proposal is to conduct performance standard testing of 30% spill at the project. Dan also responded to a question about transportation operations, saying that the plan was to spill in May and start transportation using the same criteria and a staggered approach as was done in 2010. Low flow operations were included in the FOP. Dan suggested this may not be an issue this year given the current normal or above normal water supply forecasts. He also noted a correction would be made to the John Day white paper, on page 3, to update the juvenile steelhead numbers.

Next Steps/Action: Comments or questions on the draft FOP should be directed to Dan Feil by COB on Wednesday, 3/2: dan.h.feil@usace.army.mil or (503) 808-3727. A track changes version of the document was not available according to Feil, but the 2010 FOP was posted to the TMT web page for comparison. The COE hopes to finalize the FOP by 3/11. It was noted that the RIOG would be meeting on Monday, 2/28, to discuss the FOP.

RFC Water Supply Forecast

Steve King, NOAA-RFC, shared an overview of the conditions and forecasts for 2011. He said generally, water supply was above normal in the Upper Columbia, Western Montana and Upper Snake; and below normal in Central Washington, Western Oregon and Middle Snake. While the primary assumption that goes in to the early year forecasts is 100% of normal precipitation, observed precipitation in January was 94% above Ice Harbor, 144% above Grand Coulee, and 120% above The Dalles. Runoff, he said, was strong as a result of above normal precipitation and warmer temperatures – this means that runoff volumes shifted to an earlier time period, but did not necessarily indicate that strong runoff would hold up further along in the season. Snow conditions were generally strong on the eastern side and weak on the western side (with the exception of NE Oregon, which showed fairly strong snow conditions) at this point in the year. ENSO revealed a La Nina condition that was expected to continue through the Spring, then approach neutral around the Summer months. Steve clarified that ENSO, with fairly weak correlations to water supply, is not a preferred forecasting tool especially later in the season. Overall, the 1 month outlook for precipitation conditions showed near normal, while the three month outlook showed equal chances for above or below normal conditions. The 1 and 3 month outlook for temperature showed below normal conditions.

Steve went in to more detail about the model assumptions and the official and ESP water supply forecasts throughout the basin. The forecasts were as follows:

Project	“Official” WSF	ESP WSF*
Libby	102%	100%
Hungry Horse	114%	102% (2-week old forecast)
Coeur d Alene	104%	114%
Grand Coulee (Jan-July)	104%	98%
Jackson Lake	103%	109%
Snake near Irwin	103%	92% (not current)
Dworshak	105%	109%
Lower Granite	99%	98%
Okanagen	92%	82%
Yakima	87%	84%
John Day	106%	108% (not current)
The Dalles	101%	99%

*The power point provided at the meeting showed earlier ESP forecasts – the percentages listed above were the most up to date predictions that Steve shared at the meeting, except where noted.

Steve walked the group through the RFC website to show information and formatting updates that were intended to make the data more useful, user friendly and transparent. He encouraged TMT members to communicate with him suggestions for different information, formatting, etc. that would be useful to this team. He provided his contact information: Stephen.king@noaa.gov and (503) 326-7291. He commented that the RFC, a non-regulatory agency, would like to move away from regulated flow forecasting, although the information they provide could (and likely would) still be used by regulatory agencies for that purpose. As such, RFC is developing survey questions that will be distributed to regional partners to help inform the change. The next webinar is scheduled for 3/8 and will include a similar presentation as was provided at TMT today, with updated data. Information about the webinars can be found on the RFC website.

TMT members commented that the improvements to the web were all positive changes and very useful, and thanked Steve for presenting the information today. Steve acknowledged his staff, Don Lorraine, for his work on the web changes.

Tony Norris, BPA, pointed out the ‘Seasonal Update’ to the Water Management Plan, posted on the TMT web page, that included the latest water supply forecast information. The COE was asked about the phase out of their STP model, to which Karl Kanbergs responded that this will happen eventually but not in the near future. TMT will be engaged in a discussion on this topic later this year.

Dworshak Operations

Karl Kanbergs, COE, and Steve Hall, Walla Walla District COE, shared an update on Dworshak operations, noting that a deviation request for the February flood control target had been drafted and was being discussed between the two offices. The updated target elevation, which was communicated to TMT from Steve Barton on 2/16, was 1506’. The COE will make decisions about how to operate the project in March based on updated forecasts, risk assessment and discussions between the COE, the Columbia River Forecast Group (CRFG), TMT and other appropriate regional partners. The CRFG was scheduled to meet on 2/25 to look at the various forecasts and discuss the reason for the disparity between the various forecasts that had been pointed out at the last TMT meeting. The COE is also looking at future official forecasting changes for this project, and impacts to other regional negotiations, e.g. the Columbia River Treaty. Steve Hall added that the snow stations in the area were averaging about 100% of normal, and noted that Walla Walla District uses this as one indicator along with near and long range water supply forecasts to make decisions about how to operate Dworshak.

Operations Review

Reservoirs – John Roache, Reclamation, reported on projects: Grand Coulee was at elevation 1269.1’ and drafting toward spring targets for flood control and drum gate maintenance. Hungry Horse was at elevation 3524.22’, with 8.3 kcfs outflows. Karl

Kanbergs, COE, reported on projects: Libby was at elevation 2395.77', with 5 kcfs inflows and 15.96 kcfs outflows. The project is expected to end February at or below its end of February target elevation of 2392.7'. Albeni Falls day average outflows were 23.2kcfs. Dworshak was at elevation 1507.26', with 4.1 kcfs inflows and 6.5 kcfs outflows. Lower Granite day average outflows were 51.6 kcfs; McNary day average outflows were 175 kcfs, and Bonneville day average outflows were 195.3 kcfs.

Power system – Tony Norris, BPA, reported that a draft Record of Decision re: wind integration was available for review on the www.bpa.gov website, along with announcements for upcoming public meetings on this topic. The next meeting was scheduled for 2/25 at 9:30 am at BPA.

Water quality – Laura Hamilton, COE, reported that the 2010 TDG and Temperature Report was posted to the TMT web page. She said the fixed monitoring stations would be on line in mid-March and TMT would be hearing more updates on water quality at that time.

Next Meeting, March 9, 9:00 am

Agenda items include:

- Water Supply Forecasts
- Dworshak Operations
- FOP Update
- Spill Priority List
- BPA Emergency Action Plan List
- Operations Review
- Other?

Columbia River Regional Forum
TECHNICAL MANAGEMENT TEAM OFFICIAL MINUTES

February 23, 2011

Notes: Pat Vivian

1. Introduction

Today's TMT meeting was chaired by Karl Kanbergs, COE, and facilitated by Robin Gumpert, DS Consulting. Representatives of BPA, BOR, NOAA, USFWS, Montana, the COE, NWRFC, Washington, Idaho, CRITFC and others attended. This summary is an official record of the proceedings, not a verbatim transcript. Any questions or comments should be directed to the TMT chair.

2. Review Meeting Minutes for February 9, 2011

The latest version of the facilitator's notes with comments incorporated is now posted to the TMT page. There were no additional comments today so the facilitator's notes are considered final.

There were two changes to the official minutes:

- Agenda item 5, Dworshak Water Supply Forecasts. Paul Wagner, NOAA, noted that the Dworshak hatchery has seen problems with prolonged TDG levels above 105%, not 115% as stated. Steve Hall, COE Walla Walla, will make this revision to the minutes.
- Agenda item 3. Pinniped Update. Robin Gumpert noted that the pinniped task force isn't just states, but a multi-agency task force. Doug Baus, COE, will make this revision. With these two changes, the official minutes will be considered final.

3. Vernita Bar Update

Russell Langshaw, Grant PUD, gave the first of his ongoing in-season updates on the Hanford Reach protection program. Grant PUD plans to initiate rearing protections on February 26, 2011. As of February 21, 985.7 temperature units had accrued. Updated data for the Hanford Reach fall Chinook program will be available on the Grant PUD website beginning February 26. Langshaw predicted that the protection program would end the second week of June. He will give another update at the next TMT meeting March 9.

4. Fish Operations Plan Update

Dan Feil, COE, introduced two links to this item on today's agenda. The draft spring FOP, the first link, is available for TMT members to review.

Comments are due by close of business March 2. Email comments to dan.h.feil@usace.army.gov, phone 503-808-3727.

The draft spring FOP contains sections on TDG management, low flow operations, transport operations, minimum generation and spill. Table 2 on page 9 summarizes proposed spring spill operations. Many of these are the same as last year, with the notable exception of John Day, which will be affected by plans to conduct BiOp performance testing at all three of the lower Columbia projects. The COE plans to release the final version of the spring FOP by March 11.

The second link to this item on today's agenda is to a white paper on John Day, which is also available for review. Feil noted a probable correction on page 3, where the reduction in turbine passage for juvenile steelhead should be 10-11%, not 70% of the run as stated. Feil will double-check this.

Transport operations in 2011 will be much the same as in 2010, with a staggered start of downstream collections for transport. Low flow operations are included in the Little Goose plan, but the current water supply forecast implies low-flow operations will likely not be necessary this year. TMT will revisit the spring FOP at its next meeting on March 9.

5. Water Supply Forecast Update

Steve King, NWRFC, gave a Power Point presentation on how the regional water supply forecast is shaping up for this year's fish passage season. He used the February mid-month forecast, issued February 17, as the basis for today's discussion. The ESP results from February 14 shown in the slides were updated this morning; he provided verbal updates for the new numbers. In running the forecasting model, the NWRFC made a primary assumption that spring precipitation will be 100% of normal, i.e. average. The assumption is based on several inputs including CPC climate outlooks and short term meteorological weather models.

At this point, the largest forecast, with respect to normal, is for the Clark Fork in western Montana; the smallest is for the western Cascades in Washington. King went over observed conditions (precipitation, runoff and snow pack), then discussed future conditions and forecasts for the individual basins of the Columbia system.

Precipitation: Rain has been stronger than normal in the southern tier and in western Montana. King noted that western Montana contributes 30% of runoff in the Columbia basin and another 30% comes from the Canadian portions of British Columbia. Any deviation from normal in these two areas is significant because it will play a key role in keeping flows up at The Dalles.

The January final forecast, issued early in January, assumed 100% of normal precipitation for the month of January. Observed precipitation for the month ended up at 120% of normal for the region, though areas in the Snake River and Montana were drier than normal. Conditions in February so far have been dry with the exception of the Clark Fork in the Flathead basin. Precipitation is strong in mountainous areas that produce most of the regional water supply.

Runoff: Volumes have been significant this year, largely the result of above normal precipitation combined with warm temperatures in the north. This caused a lot of mid-elevation snow to melt while the highest elevations held their snowpack. While runoff looks plentiful now, King cautioned that variations in forecasting periods and the fact that many regression models don't note timing can alter the outcome.

Snowpack: King chose six random SNOTEL locations to demonstrate that snowpack was generally above normal in the Rockies, but less than normal elsewhere.

Future conditions: The Northwest has been in a strong La Nina cycle since September 2010, as reflected by negative sea surface temperature anomalies. The La Nina trend is expected to last for a few more months, after which ocean conditions are expected to become more neutral by summer and fall. Last year, by contrast, was a strong El Nino year.

Jim Litchfield, Montana, questioned the common wisdom that says ENSO signals can predict whether it'll be a low or high volume year. King responded by showing a plot of SST vs runoff for Jan-Jul flow at The Dalles. Tony Norris, BPA, asked whether the picture changes much if the April-August timeframe is used; King didn't believe so. Paul Wagner, NOAA, asked whether the ENSO index is a useful tool as a forecast parameter. Generally, as more information accrues during the season, the RFC relies less on ENSO parameters in its forecasting, King said. He showed TMT the Climate Prediction Center's three-month precipitation outlook, which indicates that there is no preference for wet, dry, or neutral condition and that these conditions are forecasted to have an equal probability of occurrence. King noted that for many areas of the basin, especially in the southern tier basins of Oregon and Idaho, spring rain can be an important factor in the water supply outcome. He also emphasized that it can be very difficult to give long lead time predictions for heavy late season precipitation, as was the case in 2010.

Temperatures: In the short term, temperatures have been and will likely continue to be below normal.

Water supply forecasts: King gave forecasts for specific projects:

- Libby – 102% of normal Hungry Horse – 114%

- Coeur D'Alene – 104% of normal Grand Coulee – 104% of normal (January-July)
- Jackson Lake – 103% of normal
- Palisades – 103% of normal
- Dworshak – 105% of normal
- Lower Granite – 99% of normal (January-July)

He then gave updated ESP predictions based on that morning's ESP run:

- Dworshak – 109% of normal
- Palisades – 100% of normal
- Lower Granite – 99% of normal (January-July)
- Lower Columbia at Tonasket –82% of normal
- Yakima at Parker –84% of normal
- Service Creek at John Day – 109% of normal (The Dalles – 99% of normal (January-July)

King noted that tomorrow, February 24, the early bird forecast for March will be released. He explained that the RFC has updated its interactive tools on their web page, and the older version of these tools will be phased out eventually. He showed TMT members how to access the new presentation by clicking on circled areas of the RFC's water supply forecast map. He asked TMT members to let him know whether the available forecast periods meet their needs. Tony Norris, BPA, noted that the BiOp-preferred forecasting periods are January-July and April-August.

A phone participant asked whether there are monthly forecasts; King said no. The forecasts are updated monthly but they are period forecasts. He showed TMT the data normals page posted online, which provides individual months of observed information back to 1971, as well as how to use the new interactive tool to design their own forecasts.

The RFC hopes to shift away from issuing regulatory flow forecasts because it is not a regulatory agency, King announced.

The BiOp has certain requirements for regulated forecasts, Kanbergs added, so there will ultimately be some form of a long term forecast. In the meantime, the STP single trace forecast is being used. It may turn out that regulated forecasts will appear on the COE website instead of the RFC website. This change will happen sometime in the next year or two, with further discussion at TMT later this summer.

Norris showed TMT the continually updated water supply forecasts that are posted in the seasonal update to the WMP. King invited TMT members to contact him with any further questions regarding today's presentation at

stephen.king@noaa.gov, phone 503-326-7291. TMT will revisit the regional water supply forecast at its next meeting March 8.

6. Dworshak Update

Kanbergs and Hall gave updated information on Dworshak operations since the last TMT meeting, when TMT discussed the Joint Technical Staff memo highlighting a disparity between the COE principal components forecast and other forecasts. In response to concerns about this disparity, the COE is internally discussing a deviation from the required end of February flood control elevation to limit the end of February elevation at Dworshak to no higher than 1,506 feet, Kanbergs announced. This information was conveyed to TMT via email by Steve Barton on 2/16. The official end of February elevation is 1,496.8 feet. Kanbergs reiterated what King had said during his presentation: it can be very difficult to predict heavy precipitation late in the season. The COE will keep TMT informed of the outcome of the deviation request.

Hall said snowpack in the Dworshak basin is 103% of normal, an increase over the past few days. Individual snow stations range from 92% to 126% of normal, with most around 100% of normal. The water supply at Dworshak is heavily driven by snowpack, rather than spring rains, Hall said. Kanbergs noted that the long range climate forecast continues to show wetter and cooler than normal conditions. The wetter climate forecast did not hold for the first part of February. TMT will revisit Dworshak operations at its next meeting.

7. Operations Review

a. Reservoirs. Grand Coulee is at elevation 1,269.1 feet, drafting toward spring flood control targets and required drum maintenance next month. Hungry Horse is at elevation 3,524.22 feet, discharging 8.3 kcfs. Libby is at elevation 2,395.77 feet, with inflows of 5 kcfs and average releases of 15.96 kcfs. The end of February elevation target is 2,392.7 feet.

Albeni Falls is at elevation 2,055.5 feet, operating between 2,055-2,056 feet elevation with average releases of 23.2 kcfs. Priest Rapids flows are 132.4 kcfs. Dworshak is at elevation 1,507.26 feet, drafting slightly, with 4.1 kcfs inflows and 6.5 kcfs outflows. The project has cut back from full powerhouse flows and will operate at or below elevation 1,506 feet pending the outcome of the deviation request.

Lower Granite is discharging 51.6 kcfs average flows and has been close to 50 kcfs for the past 5 days. McNary is discharging 175 kcfs average flows, down from 200 kcfs for most of the week. Bonneville is discharging 195.3 kcfs.

b. Fish. There was nothing to report today.

c. Power System. BPA has issued a draft Record of Decision regarding environmental dispatch of wind integration during high wind conditions. The ROD is available on the BPA web page.

d. Water Quality. The COE has released its annual TDG and temperature report, Laura Hamilton, COE, reported. The report is available on the RCC water quality page under water quality data.

3. Next Meetings

The next TMT meeting in person will be March 9. The water supply forecast, Dworshak operations, a FOP update, the spill priority list, and the BPA emergency action plan will be on the agenda.

<i>Name</i>	<i>Affiliation</i>
Tony Norris	BPA
John Roache	BOR
Paul Wagner	NOAA
David Wills	USFWS
Jim Litchfield	Montana
Karl Kanbergs	COE
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