COLUMBIA RIVER REGIONAL FORUM

TECHNICAL MANAGEMENT TEAM

February 16, 2005

FACILITATOR'S SUMMARY NOTES ON FUTURE ACTIONS

Facilitator: Robin Harkless

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.

Spring Creek Hatchery Release:
The USFWS will accommodate the COE's request to release the Spring Creek hatchery fish on March 2 (PM), and the COE will open the corner collector on March 3 (AM). Due to the lower flows, the USFWS requested that the corner collector operation continue for 6 days (instead of 4, as discussed at the January 19 TMT meeting) to provide protection in case of a slower egress. BPA and the COE responded that this was an unexpected request, and that they needed to coordinate further with the USFWS after the TMT meeting.

ACTION: Cindy Henriksen will email TMT when a decision is made about the Spring Creek hatchery release operation.

WMP Spring/Summer Update:
The spring/summer update was posted on the TMT web page on February 15. The February final water supply forecast (which is below average) is driving the planned operations for spring and summer at this point. The February final shows Lower Granite April-August at 12.7 MAF, The Dalles at 69.2 MAF, which would recommend a flow objective of 85 kcfs at Lower Granite, and 220 kcfs average McNary in the spring. The spring/summer update includes planned operations for drum gate work in the spring at Grand Coulee, and a summer draft limit of 1278'. In the lower Snake River, the operating ranges shown are the same as those that were implemented last year, where Lower Granite, Little Goose and Ice Harbor operated at MOP + 1.

The action agencies proposed that the Hanford Reach Agreement be removed as an appendix and put as a stand alone document and posted to the TMT web page. TMT members agreed to this.

There was an SRWG meeting planned for the afternoon of February 16, at which the group would look at research possibilities given the projected low flows for this year. Discussions are on-going about Lower Snake research. In response to a question, it was noted that SRWG and SCT make decisions about research.

Next Steps – TMT will review the draft spring/summer update and come prepared to discuss it at the next TMT meeting, on March 2. The document will be updated monthly to include new final forecasts, the next being around March 10. A suggestion was made

to find a better way to determine 'flood risk' and flood control elevations. The COE has been looking at the feasibility, cost estimate and scope for a study proposal to look at the flood risk issue. Cindy Henriksen will keep TMT apprised of developments of the study proposal.

Lower Granite Seasonal Average Forecast

Cindy Henriksen presented the Q Adjust and ESP models for Lower Granite. The Q Adjust looks at possibilities for flow given current expected reservoir operations on a monthly time scale. The Q Adjust showed 62 kcfs April-June average monthly flow at Lower Granite. The ESP runs show volumes using daily time step averages from historical years. Lower Granite shows an April-July range of 8.5-19 MAF. The ESP tool can be used to show what volume of water would be needed to reach a particular flow objective.

Cindy pointed out that, depending on the question asked of the modelers, the models can show different things (e.g. inform research decisions, inform operations decisions). Also, while the dots on the ESP graph are representative of weather in particular years, they are not fully representative of a particular water year. It was suggested that the COE begin presentations on the models with more detailed information about the question that was asked in order to better understand what the graph is saying. Generally, the management implication from the Lower Granite model is that the likelihood of spill through the season is low.

Dworshak ESP Volumes

The question asked with the Dworshak model was: How often historically does Dworshak reach shifted flood control elevations at the end of March? The model showed that Dworshak met its flood control target during 16 out of 44 years. The take away message from this model is that there is not a lot of flexibility in the system given today's conditions.

Q-Adjust Model Using February Final Forecast

The McNary May-June average outflow ranges from 170-250 kcfs. The Priest Rapids table showed that 47 of 69 years met 65 kcfs by April 10, and 10 of 69 years met 135 kcfs on April 30. Lower Granite did not meet flow objectives of 50 kcfs, according to the model, in July-August. A suggestion was made to add The Dalles information to the bottom of the chart.

Chum Information/Operations

Dave Wills, USFWS, provided elevations and GPS information about redds, per a request from the COE. The salmon managers were not able to organize a site visit since the last TMT meeting, and are hoping to schedule it soon. The action agencies now want to lower the tailwater to 11.5' in order to reserve water that may be needed later upstream, given the low water supply forecast. This would give some flexibility at Grand Coulee. The salmon managers suggested that instead of lowering the tailwater, stabilize flows out of Bonneville. BPA responded that this would have a potential cost associated with it, and at this point, there has been no demonstration that there is a need for higher flows for chum redds.

ACTION: John Wellschlager, BPA, will check with operators to find out what timeframe (number of hours, day(s) of the week) would be acceptable for a stable flow operation to allow the salmon managers to do a site visit. John will coordinate with Dave Wills, and Dave will schedule a field visit based on the information. It was suggested that the I-205 area be looked at for tidal influence. Operations to move the RSW to Ice Harbor showed that Bonneville operations have little to no influence on tidal elevations downstream. The Bonneville tailwater will be operated at an 11.9' soft, constraint, 11.5' hard constraint elevation.

Status of Operation

Reservoirs – Hungry Horse is at 3545.8'. Grand Coulee is at 1280.3'. Libby is filling, and at 2413'. Dworshak is also filling, and at elevation 1563'. Lower Granite is releasing about 20 kcfs. Brownlee is 9' from full.

Fish – Russ Kiefer, IDFG, reported that 9 burbot were caught this year, which reveals a continuing downward trend. For more detailed information about burbot, folks can contact Russ.

Power system – No report.

Water quality – Jim Adams, COE, reported on TDG characteristics during the Libby outage. At speed/no load, TDG levels were at 122%. With spill, TDG was at 126%. Three miles downstream of spill, TDG was 116%, and six miles downstream it was at 113%.

Also, there was a letter sent out from the WQT about comments and recommendations to the Fixed Monitoring System that included a recommendation to retire the Camas/Washougal site. The COE does not support this recommendation at this time, and plans to submit a follow-up letter clarifying this.

ACTIONS/NEXT MEETING AGENDA:

Actions from 2/16/05 meeting:

- Coordination re: Spring Creek hatchery release – COE, BPA, USFWS
- Email to TMT re: Spring Creek operation – Cindy Henriksen
- Coordination on information about timing of a field trip to do GPS surveys downstream of Bonneville – John Wellschlager and Dave Wills
- Schedule a field trip to do GPS surveys – Dave Wills and salmon managers

Next TMT meeting, March 2, 9am-noon:

- Chum Operations Update – Dave Wills
- Draft Spring/Summer Update WMP – TMT
- Update on Implementation Plans – Action Agency Caucus Group
- Status of Operations
    - Fish forecasts for 2005 – Cindy LeFleur

1. Greetings and Introductions.

The February 16 meeting of the Technical management Team was chaired by Cindy Henriksen and facilitated by Robin Harkless. The following is a summary (not a verbatim transcript) of the items discussed and decisions made at this meeting. Anyone with questions about these notes should contact Henriksen at 503/808-3945.

2. Spring Creek Hatchery Release.

The Fish and Wildlife Service agreed at the last TMT meeting to release the Spring Creek fish on March 2, at the request of the Corps, said David Wills; we can do it in either the morning or the afternoon. It was agreed to schedule an afternoon release, then open the corner collector the following morning, March 3, for four days. Rudd Turner noted that flows are projected to be fairly low next week. Wills said the low flows are a concern for the Fish and Wildlife Service, and it may be advisable to keep the corner collector open for an extra two days, if possible. When will you make this request? Henriksen asked. Right now, Wills replied.

The flows we're expecting next week in the lower river aren't anything other than we would expect in a low-flow year, said Henriksen. My recollection is that we also provided an additional flow volume during last year's Spring Creek operation; again, this is the flow volume you would expect to see in a year like this. I'm not seeing the need for an additional corner collector operation this year, she said. Still, that is our recommendation, said Wills. Part of it is that we're a bit surprised, said John Wellschlager – we walked away from the last TMT meeting feeling as if we had an agreement in principal. I believe I prefaced my remarks at the last TMT meeting by saying that what we were requesting was the minimum operation, Wills replied; it doesn't strike me that two additional days of corner collector operation is a major departure from what we discussed last week.

After a few minutes of additional discussion, Henriksen said the action agencies will consider the Fish and Wildlife Service request for two additional days of corner collector operations; they will discuss it among themselves and inform USFWS and the other TMT members of their decision via email. Jim Adams said the Cascade Island and Camas/Washougal gauges will be operational well in advance of the Spring Creek release; the Warrendale and Bonneville forebay stations will also be operational during the release.

3. Spring/Summer Update.

We posted the spring/summer update to the TMT homepage yesterday, said Henriksen; it represents the February final forecast. The update provides an overview of the action agencies' plan as to how they intend to operate the FCRPS projects this spring and summer. The February final forecast predicts a runoff volume of 12.7 MAF, April-July, for Lower Granite, and 69.2 MAF, April-August, at The Dalles. These low water supply forecasts point to spring flow objectives for fish that would be at the lowe end of the sliding scale. Accordingly, the Spring/Summer Update shows spring flow objectives of 85 Kcfs at Lower Granite and 220 Kcfs at McNary. Priest Rapids' spring flow

objective, as always, will be 135 Kcfs. At Libby, the sturgeon pulse would be 877 kaf, within the tier one volume. The Grand Coulee drum gate work is also included in more detail, as are Dworshak temperature and flood control operations. Grand Coulee is expected to draft to 1278 by August 31. For MOP operations we're showing operations at the Lower Snake projects at a similar elevation to last year, Henriksen added.

One question we had was the 2005 Hanford Reach operation, which is covered under Appendix C, Henriksen said. We were thinking of removing the actual language of the Hanford Reach agreement from the spring/summer update and putting it on the website instead. That would be fine, said Paul Wagner.

There are also descriptions of the potential spring spill operations at the Lower Snake dams, Henriksen said; based on the February final forecast, the Q-Adjust runs are showing flows in the below 70 Kcfs for the Lower Snake projects during the spring, which would make this a transport season. If there is no spill this spring, that will impact research, she said. Wills noted that there is an SRWG meeting scheduled for this afternoon; he said it would be helpful to have any pertinent information regarding the spill situation in advance of that meeting. In response to a question from Wagner, Rudd Turner said any changes to the planned research program will be addressed through SRWG and SCT, and through IT if disputes occur.

Mainly, we wanted people here at TMT to be aware of the situation presented by the February final forecast and its associated modeling, Henriksen said. She noted that the Ice Harbor RSW was moved into the lower river last week, and is making its way upstream toward the dam. It is still scheduled to be in place before the spring freshet begins. Turner said he has heard that it will take one month to transport and install the RSW.

The rest of the document talks about summer spill operations, transport from the Lower Snake collector projects, summer spill at McNary, spring spill at McNary (until conditions are no longer springlike). John Day will be operated between 262.5 feet and 264 feet, the lowest elevation at which irrigation withdrawals are possible. The Dalles will spill 40% of total river flow or up to the gas cap; Bonneville will spill up to the gas cap at night and 75 Kcfs during the day. The update also discusses the water quality spill priority list and gas cap levels, Henriksen said. We will operate up to the 115% gas cap as measured at the Camas/Washougal gauge, as per the Oregon waiver, she added.

The rest of the update is still relatively blank, particularly the sections covering planned biological research, Henriksen continued – much of that research has not yet been finalized. In terms of next steps, if you have comments or questions, they're welcome; we will also update the spring/summer update on a monthly basis, as additional monthly final forecasts are received. The document will be finalized after the April final forecast is received, although the March final forecast will be an important indicator of the type of water year to expect in 2005.

One comment, said Russ Kiefer – these flow projections and expected operations are as dismal as we expected. Yet just three weeks ago, the Corps was drafting Dworshak for local flood control. There has to be a better way to decide how to set those flood

control elevations. Wellschlager noted that Dworshak was drafted to meet its January 31 flood control elevation, which cannot be violated. Hindsight is always 20/20, he said, but by statute, the Corps cannot violate those flood control elevations. Henriksen added that the Corps is finalizing a scope of work to look at re-evaluating how flood control elevations are set for the FCRPS storage projects; the feasibility-level Scope of work study should be conducted in 2005. It was agreed to revisit the spring/summer update at the March 2 TMT meeting.

4. Lower Granite Seasonal Average Forecast.

Henriksen showed the group a pair of graphs, the first titled "Lower Granite Seasonal Average Flows from QADJ." She noted that this is a monthly time-step model that shapes the water supply forecast according to the shape of the 69 historic water years for the period February 1-June 30. Overlaying expected reservoir operations, she said, Lower Granite spring seasonal average flows ranged between 52 Kcfs and 68 Kcfs, with an average of about 62 Kcfs. Basically, this is intended to give you a range of potential seasonal average flows to think about.

The second graph was titled "Lower Granite ESP Volumes vs. Seasonal Average Flow." Henriksen explained that this modeling exercise covers 44 historic weather sequences, starting with current snowpack and soil moisture data, then looks at historic weather in a daily timestep, calculating the resulting volumes from that operation. This shows possible Lower Granite runoff volumes between 8.5 MAF and 19 MAF. With our current projected runoff of 12.7 MAF, the average flow volume at Lower Granite would be less than 70 Kcfs for the spring season, Henriksen explained. She explained that essentially what this graph shows is that, if you start with current soil moisture and snowpack data, then apply the precipitation and weather from one of the historic water years from this date forward, one of the points on this graph would result.
Again, the goal is to show the TMT the bookends of the potential 2005 water supply and runoff, Henriksen said. It was observed that the other thing this graph shows is that, to achieve a seasonal average flow of 85 Kcfs at Lower Granite, the runoff volume would have to increase from 12.7 MAF to about 16 MAF, an improvement of 3.3 MAF over what is currently projected to occur between now and June 30.

Henriksen said she had asked her modeling experts to answer the question, "Based on the February final forecast of 12.7 MAF at Lower Granite, what magnitude of seasonal average flow can we expect at Lower Granite from April 1-June 30?" The answer, from both of these modeling exercises, was less than 70 Kcfs.

The group discussed the extent to which ESP and Q-Adjust are used to guide operations. The Corps characterized ESP, in particular, as an informational tool, rather than a tool on which to base decisions. Dave Statler observed that, in the past, the Corps has used ESP to direct individual reservoir operations. Henriksen replied that each question the model is asked is a little different, in terms of how the results are applied. In this particular case, she explained, the goal of the question ESP was asked was to inform the Corps' 2005 research decisions, and to assess the likelihood that the Lower Snake projects will spill this spring. And it sounds as though the likelihood of spring spill at the Lower Snake projects is very low in 2005, Wagner observed.

Anyway, I wanted to get this information to TMT, said Henriksen; again, we will be updating these graphs as the season progresses and more monthly final forecasts are received.

5. Dworshak ESP Volumes/Projected March 31 Elevation.

This is a subset of the ESP data we just saw from Lower Granite, Henriksen said; again using the 44 historic water years that were modeled, we calculated Dworshak's April-July runoff. What I asked the modelers was, using the ESP tool, how often does Dworshak reach a March 31 shifted flood control elevation of 1585.4, if we release minimum outflow between now and March 31? What this shows is that in 16 of the 44 water years, Dworshak would reach 1585.4 by March 31. In other words, there is still a likelihood that Dworshak will achieve its March 31 shifted flood control elevation in 2005, Henriksen said. She added that the February final water supply forecast is 1.64 MAF at Dworshak, at the lower end of the historic range. It sounds as though there isn't much flexibility in Dworshak operations in 2005, Wagner observed. Not today, no, Henriksen replied.

Statler noted that Dworshak's February final forecast has decreased from the January final forecast, which was about 1.8 MAF. My point is that the earlier you run this model, the more uncertainty you're dealing with, in applying ESP, and the more caution you should use in making water management decisions early in the season, he said. Wellschlager reiterated that the January water release from Dworshak was done for flood control, not for power; it was mandatory, not elective. In response to a question, Henriksen said Dworshak's February 28 flood control elevation is 1571 feet.

6. Q Adjust Model Using February Final Forecast.

Henriksen said that, with respect to the QAdjust modeling runs for McNary, looking at the range of flows expected at that project in the spring, and the number of years the 220 Kcfs average flow target would be met, based on the 69 historic water years, McNary's average flow ranged from a low of 170 Kcfs to a high of 250 Kcfs. McNary met the 220 Kcfs target in only three of the 69 historic years during April, in 20 of the 69 years during May, and in 30 of the 69 years during June. In response to a question, Henriksen said the QAdjust model assumes Treaty operations for the Canadian projects. Also according to the QAdjust model, Priest Rapids is very unlikely to achieve its 135 Kcfs spring seasonal flow objective, while Bonneville is very likely to achieve its February 1-April 30 chum incubation flow objective of 125 Kcfs. In response to a request from Wills, Henriksen said the Corps modelers will add The Dalles to the Periodic Average Flows table. In response to another question, Henriksen said she would check on the discrepancies in the numbers between the periodic table and some of the data in the tables; after doing so, she said the data in the periodic flow table is correct, and the numbers in the project-by-project tables have now been corrected.

7. Chum Update.

Wills provided a table showing 195 individual chum redd elevations and GPS locations, in response to a request from Cathy Hlebechuk at the last TMT meeting. The highest redd, in terms of gravel elevation, is just over 10 feet NGVD. Henriksen said the Corps will assimilate and convert this data to elevation above mean sea level, which will tell the Corps where the redds are in comparison to Bonneville tailwater elevations. Wellschlager reminded the group that this information was requested in response to an assertion at an earlier TMT meeting by Ron Boyce that a minimum Bonneville tailwater elevation of 12.1 feet was needed to protect the redds during incubation.

Our hope was that, by this meeting, we could reduce the minimum tailwater elevation to 11.5 feet, Wellschlager said. It would be very helpful to have that flexibility, given the below-average water supply forecast across the basin, Henriksen said. So by going to 11.5, you're hoping to save water for later in the season? Wills asked. That's the intent, Henriksen replied. Where do you save that water? asked Cindy LeFleur. At Grand Coulee, primarily, Norris replied – if we keep the tailwater elevation at Bonneville at 11.9 feet, we may have to draft Grand Coulee lower than elevation 1255. You could also save water by reducing the peak flows at Bonneville, Steve Haeseker observed. Henriksen observed that most of the precipitation that has fallen in the last month has done so in liquid form, which has then flowed straight down through the system.

As we've said in the past, said Wellschlager, the emphasis at TMT is, demonstrate the need for a higher tailwater elevation at Bonneville. To us, that evidence has not yet been presented, but bear in mind that there are costs associated with this operation. Speaking for the action agencies, we feel we've been reasonable, and given you an opportunity to present your case. I understand, said Wills; we've tried to put that information together, but haven't been able to do so. Even so, the salmon managers would prefer that the Bonneville tailwater elevation be maintained at 11.9 feet. Steve Haeseker suggested an alternative: hold the tailwater elevation steady at 11.5 feet for 24 hours, to allow field crews to assess the impacts of this operation on redd coverage.

After a few minutes of additional discussion, the action agencies said Bonneville will be operated to maintain an 11.9-foot tailwater elevation as a soft constraint, and 11.5 feet as a hard constraint. Henriksen added that, if the salmon managers can give the action agencies a few days of lead time, it may be possible to hold a steady tailwater elevation of 11.5 feet for several hours to allow them to conduct the redd survey, perhaps on a weekend. Give us a date and a time-frame, and we'll work with you, said Wellschlager, adding that he will check with his operational personnel to see which day of the week would be best for the survey, as well as how many hours it may be possible to hold a constant tailwater elevation.

In response to a question from Kiefer, Wellschlager said daily tidal fluctuations are 2.5-3 feet at the I-205 chum spawning site; last week, in a special operation to float the Ice Harbor RSW upstream, the action agencies increased Bonneville outflow by 50 Kcfs. The increase in I-205 elevation in response to that operation was 0.4 feet, so clearly, tidal influence is a much greater factor at that site. The bottom line is that we can't appreciably influence the river depth at I-205 through operations at Bonneville, said Wellschlager.

In the interim, to be clear, we will be maintaining 11.5 feet as a hard constraint and 11.9 feet as a soft constraint, Henriksen said. It was agreed to revisit this topic at the next TMT meeting.

8. Status of Operation.

Reclamation said Hungry Horse is currently at elevation 3545.8 feet; Grand Coulee is at 1280.3 feet and drafting about a foot per day. The draft limit at that project is 1.5 feet per day. So it will be at 1255 by April 1? LeFleur asked. Yes, but there's some variability there, Norris replied – we don't want to end March below 1255. In response to another question, Norris said Grand Coulee's normal April 10 flood control elevation, if the drum gate repairs were not occurring this year, would be 1283 feet.

The Corps reported that Libby is at elevation 2413 and filling slightly; it has filled only about 2 feet since January 1. Dworshak is at 1563 and continuing to fill, with a February 28 flood control point of 1571 feet. Lower Granite outflow is averaging about 20 Kcfs. Brownlee is 9 feet from full, with no flood control this year.

Wagner said there is nothing to report on the fish front at this time. Kiefer added that IDFG caught nine burbot this year, down from 19 last year.

Wellschlager said there are no significant power system issues to report. Jim Adams said the Corps is preparing a draft report on the TDG impacts of the recent Libby outage; speed-no-load produced TDG of about 122% on the powerhouse side of the Kootenai River just downstream of the dam; Meanwhile the spillway side of the river just downstream of the dam produced up to 126 % TDG. By 6 miles downstream, TDG levels had fallen to 113%. Second, he said, some of you may have received a letter from Mark Schneider and the Water Quality Team, describing the WQT's conclusions regarding fixed monitoring stations in 2005; there was an error in the letter, where it stated that the entire WQT was in favor of retiring the Camas/Washougal fixed monitoring station. That is incorrect; the Corps and Bonneville do not support that change, Adams said.

9. Next TMT Meeting date.

The next meeting of the Technical Management Team was set for March 2. Meeting summary prepared by Jeff Kuechle.

TMT Attendance List
February 16, 2005

Name	**Affiliation**
Robin Harkless	Facilitation Team
Paul Wagner	NOAAF
John Wellschlager	BPA

Russ Kiefer	IDFG
Tony Norris	USBR
Cindy Henriksen	COE
Rudd Turner	COE
Ray Gonzalez	COE
Julie Ammann	COE
Jim Adams	COE
Greg Wolfe	Constellation
David Wills	USFWS
Steve Haeseker	USFWS
Tim Heizenrater	PPM
Tom Haymaker	PNGC
Nic Lane	BPA
Russ George	WMCI
Ruth Burris	PGE
Kevin Nordt	Mid-Columbias
David Benner	FPC
Kyle Martin	CRITFC
Laura Hamilton	COE
Dan Spear	BPA
Steve Kern	PNGC
Larry Beck	COE
Don Faulkner	COE
Dan Bedbury	EWEB
Glenn Traeger	Avista
Bruce MacKay	Consultant
Victoria Watkins	Pyra Energy Group
Cindy LeFleur	WDFE
Dave Statler	NPT