# COLUMBIA RIVER REGIONAL FORUM

## TECHNICAL MANAGEMENT TEAM

April 13, 2005

FACILITATOR'S SUMMARY NOTES ON FUTURE ACTIONS

Facilitator: Donna Silverberg

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.

**Comments on 4/16/05 Facilitator Notes**

- Under the discussion of Dworshak, change comment about Oregon and Idaho to "directly challenged the COE on the validity of the flood control requirements at Dworshak".
- Under the Dworshak discussion, change to the 'project increased flows to available power house, with 2 units operating.'
- **ACTION**: The facilitation team will make changes to the notes and send the final version out with draft notes from today's meeting.

**Hanford Reach**

Russell Langshaw, Grant County PUD, reported on operations at Hanford Reach during the week of April 4-10. The week average flow was 87 kcfs. Flows were stable and band constraints were met on all days except 4/4 and 4/6 (4/4 due to increased discharge). The project was up to 723 temperature units as of 4/12, and the project expects to reach 800 tu's next week. This will initiate protection flows, expected around 4/23 or 4/24. End of emergence is expected in mid-May.

**April Final Water Supply Forecast**

The April final forecast generally shows increases from the March final. Libby remains at 5.4 MAF (86% average), implying a 'tier 1' operation for sturgeon (see 'Flow Augmentation Volumes" discussion for more detail). The Dworshak forecast is 1.32 MAF. The BOR's forecast for Hungry Horse Jan-July is 6.17 MAF (75%).Grand Coulee is up nearly 2 MAF to 52.2 (83%). The Lower Granite forecast is up to 11.1 MAF (52%). The Dalles April-Sept. forecast is 64.6 MAF (65%), and the Jan-July is 73.8 MAF (69%).

**Flow Augmentation Volumes**

The COE provided handouts of bar chart graphs for Dworshak, Libby, and Hungry Horse using the April final forecast to predict available volumes at the projects for flow augmentation downstream. The April 1-June 30 charts show 532 kaf available at Dworshak, 418 kaf at Libby, and 822 kaf at Hungry Horse.

Oregon noted that it was not clear from their perspective which information for flood control was taken into account for Dworshak operations. The River Forecast Center forecast appears to be slightly above the COE's April final forecast. Cindy Henriksen

clarified that operations at Dworshak were not dependent on the April final forecast, but that snow pack in the Dworshak area, as observed via satellite telemetry and through on the ground data gathering, initiated local flood control operations. (See "Operations During Low Flow Years" for further discussion/clarification on this issue.)

The Libby volume estimate includes a sturgeon pulse operation, based on the April final water supply forecast, requiring 800 kaf. Sturgeon pulse operations information can be found on page 30 of the WMP. Cindy clarified that the 'inflow' volume subtracted in the graphs refers to April 1-11 inflows.

**Q Adjust/HYSRR-ESP Models**

*Q Adjust* – The model includes the April final forecast, and depicts volumes shaped 69 different ways. Assumptions (objectives) included meeting 70 kcfs at Priest Rapids during the first half of April to accommodate Bonneville minimum flows for chum, and not drafting Grand Coulee below 1240'. As compared to the last Q Adjust model run, refill elevation and timing shifts changed the outcomes slightly.

*ESP-HYSRR* – This model showed 44 historic sequences of weather, moving forward from April 5, instead of an average single trace perspective. It used the same assumptions used in the Q Adjust model. This model provides bookends for operations with unknown outcomes for water supply. The COE plans to use this new tool exclusively in the future in place of STP.

*Next Steps* – The COE will update ESP runs as the season continues. It was noted that ESP is more optimistic, and this is because it adds volumes to the forecast in some cases, where as Q Adjust always uses the current forecast and shapes it different ways to provide possible scenarios.

If there are additional questions about the models, contact Cindy Henriksen. It was noted that it takes a full day at the COE to put together data input for the model. The information then goes to the RFC, who runs the model with input from the COE, and this requires an additional 1-2 days to complete.

*If there are additional questions about the models, contact Cindy Henriksen. It was noted that it takes several days to prepare ESP HYSSR runs. The models starts with inflow input from the RFC, which can take up to two days to develop, followed by reservoir regulation by the Corps for another one or two days. The Corps input requires assistance from office outside RCC, so those modelers may not always be available to prepare the runs.*

**ACTION**: The COE will put together a handout describing differences between the models (inflows, outcomes, etc.). If questions remain, there might be a separate session/training for TMT members to better understand the models.

**Operations During Low Flow Years**

*Chum update* – Total chum numbers are up slightly from the last survey, but the salmon managers are seeing a downward trend. A survey is scheduled for Tuesday, 4/19, after which the salmon managers will confirm the trend. The peak appears to have occurred around March 25. It is not known yet what percentage of the run has passed Bonneville, but the salmon managers' best estimate is around 80-95%. Gas levels at Multnomah Falls were around 102.5% on 4/12, with 1.3' depth compensation over the redds.

*Start of Bonneville spill* – Based on the above information, salmon managers requested that the action agencies plan to begin spill at 50 kcfs for 24 hours on 4/15. TDG levels, seining catch and passage indices will be monitored to determine next steps. IF there is a change, the salmon managers will notify the action agencies as soon as possible – the action agencies will need some time to make adjustments, unless the request is for no spill at the project. A COE contractor was scheduled to open the B2 corner collector on 4/15, so it will be operated sometime that afternoon, even if spill does not go forward. Oregon expressed appreciation for BPA accommodating the 11.5' tailwater request at Bonneville, with just one day's notice. BPA noted that this is not always possible.

**ACTION**: The action agencies will plan to begin spill at Bonneville on Friday 4/15, for 24 hours, at 50 kcfs. The salmon managers will notify the action agencies on Thursday morning IF a change in the operation is requested. The action agencies will target BiOp spill on Tuesday 4/19 pm, per recommendation from the salmon managers, unless noted otherwise after FPAC discussions Tuesday morning.

*Shape of Priest Rapids Flows* – The COE ran the Q Adjust model with Priest Rapids flows at 110 kcfs from April 15-30, 130 kcfs in May, and refilling Grand Coulee in June. The salmon managers recommended that the COE model a scenario in which flows are increased to 90 kcfs now, 110 kcfs when fish arrive (~4/22), and 130 kcfs in May. The salmon managers will wait to gather additional information to make recommendations for June operations. The COE will run the Q Adjust model with the suggested assumptions, including higher flow at the end of June (vs. beginning) to accommodate Hanford Reach/Snake River migrants. The COE may be able to run an additional model later. TMT will revisit this issue at the 4/27 TMT meeting.

**CRITFC River Operations Plan**

The action agencies will provide a formal written response to the CRITFC River Operations Plan as soon as possible, in the next month. Tony Norris, BOR, offered to sit down with Kyle Martin to talk about his review of the document. He noted that there are some places where the plan poses legal and contractual constraints for the federal agencies.

**Water Management Plan Spring/Summer Update**

Flood control elevations, runoff data and the Q Adjust models have been updated and included in the latest draft Spring/Summer update, with the new water supply forecast. No comments have been submitted to date. The document will be finalized and posted to the TMT web page this week.

**Status of Operations**

*Reservoirs* – Libby inflows have been at 5-6 kcfs. The project is at 2413.5' and filling, continuing to release 4 kcfs. Grand Coulee is at elevation 1253.8'. Hungry Horse is at 3550.8' and ramped up to 7 kcfs outflows on 4/14. Dworshak is at 1585.4', with 8 kcfs in and 4.3 kcfs out. With the third unit available as of today, full powerhouse capacity went to 10 kcfs. Lower Granite flows are at 40 kcfs and McNary flows are at 120 kcfs.

*Feedback on graphs* – Paul Wagner and Dave Wills provided comments on the COE graphs presented at the March 23 TMT meeting. Additional comments from salmon managers are welcome.

*Dworshak flood control* – The Walla Walla COE gathered snow cover and local flood control information for Dworshak, based on NRCS data. The NRCS and COE agreed that, based on the data, the snow pack was around 40%, requiring that the project be operated to a local flood control elevation of 1587' by April 15.

Oregon and Idaho responded to last week's discussion, saying it was not clear what information was being used to determine the operation at Dworshak, and noted the discrepancy between the water supply forecasts from RFC and the COE. Flood control risks in play were also unclear.

The COE responded that the April final forecasts were not considered in implementing last week's operation. The 40% snow pack estimate included snow pack comparisons in other areas, and the COE forecasted some runoff by April 15. Power house capacity at Dworshak was limited last week because only 2 units were available; the COE did not spill. Now a third unit is available so the project is able to pass inflow and slow Dworshak refill. Local flood control constraints were the driver: 276 kaf was available in the reservoir, with an expected 1.2 MAF volume in between now and June. 25 kcfs spill could be required during an emergency, which in the past caused structural issues downstream. 25 kcfs would equal about 120% TDG.

Question: How often will satellite images be updated, and where can we this information be found on the web? It was suggested that the information might be found on the RFC website.

**ACTION**: Dworshak local flood control and operations will be revisited and an expert from Walla Walla will present information at the 4/27 TMT meeting about the snow cover analysis, including where to find satellite images on the web and how often the images are updated.

*Fish* – A hatchery release from Dworshak occurred on 4/4 and 4/6. Lower Granite yearling passage increased to 19,000 on 4/12; increases were seen at Lower Monumental and Little Goose as well. McNary saw 1,200 total yearlings on 4/11; John Day is estimating about 2,500 yearlings per day. Increased numbers of yearlings have been observed at Bonneville, with subyearling numbers on the decline. Coho numbers increased at Bonneville. 11,000 steelhead have passed Lower Granite, and 1,000 have been seen at Bonneville. Sockeye numbers have increased at Lower Granite. A total of

199 adult spring chinook have reached Bonneville, and numbers are increasing. Numbers at this point are low (it was estimated that an average 20,000 historically have reached the project at this time).

**ACTION**: Larry Beck, COE, will request a presentation from Robert Stansell on is pinniped study at the next TMT meeting. Note: Larry confirmed that Robert is available to give a presentation to TMT on 4/27.

*Water quality* – The COE continues to track TDG at Warrendale for chum redds. They plan to continue monitoring through April. The Dalles spill may cause some increase in TDG at Bonneville in the next few days, until spill at Bonneville begins. The SYSTDG model shows the project at ~108% without spill, which would increase by 3-4% with spill.

**Next Meeting, April 27, 9am-noon**

Agenda items include:

- Review 4/6, 4/13 Minutes
- Hanford Reach Update
- Water Supply Forecast
- Flow Objectives at Priest Rapids
- Q Adjust, ESP Runs
- Chum Update
- Operations Review
- DWK Local Flood Control Analysis – Walla Walla COE
- Report on Pinniped Research – Robert Stansell

**Actions from 4/13 Meeting**

- Correct 4/13 facilitator notes, send out to TMT – Facilitation Team
- Written feedback from action agencies on CRITFC's River Operations Plan for 2005 – **By May 11**
- Provide handout describing/summarizing different models – COE
- Coordination about spill at Bonneville – Salmon managers and Action agencies – **4/14 and 4/19 AM**

### *1. Greetings and Introductions.*

The April 13 meeting of the Technical Management Team was chaired by Cindy Henriksen and facilitated by Donna Silverberg, who led a round of introductions and a review of today's agenda. The following is a summary (not a verbatim transcript) of the issues discussed and decisions made at this meeting. Anyone with questions or comments about these minutes should contact Henriksen at 503/808-3945.

### *2. Hanford Reach Update.*

Russell Langshaw said flows were relatively low and stable last week, with bands ranging from 7.4 to 1.1 Kcfs. Average flow at Priest Rapids fell from 129.7 Kcfs on April 5 to 69.1 Kcfs on April 8. The week-average flow was 87 Kcfs. The flow band was 20-30 Kcfs last week; it was exceeded on April 4 and April 6, but met on all the other days. As of yesterday, the fish were at 723 temperature units since the end of spawning; we should reach 800 temperature units by late next week, Langshaw said. How concerned are we with stranding following the flow band exceedence of 37.8 Kcfs on April 4? Russ Kiefer asked. It was an increasing flow band, so it shouldn't be much of a concern, Henriksen replied.

***3. April Final Water Supply Forecast.***

Henriksen said that, generally, the April final water supply forecast is larger than the March final was. At Libby, the April final forecast is still 5.4 MAF, 86% of average. At Dworshak, the volume decreased to 1.32 MAF, 50% of average. At Hungry Horse, the April final Reclamation forecast is 16.78 MAF, 75% of average, said Tony Norris. At Grand Coulee, the forecast is now 52.2 MAF, up significantly – almost 2 MAF – in comparison to the March final – up to 83% of average. At Lower Granite, said Henriksen, the April final forecast has increased to just over 11 MAF, 52% of average. At The Dalles, the April-September forecast is now 64.6 MAF, 65% of average. The January-July forecast of 73.8 MAF, 61% of average.

***4. Flow Augmentation Volumes at Headwater Reservoirs.***

Henriksen said this information is available via hot-link from today's agenda on the TMT homepage. Again, she said, this is an estimate of the volume of water available above minimum flow and refill needs for flow augmentation for resident and anadromous fish. At Dworshak, the current available volume is 532 kaf, assuming 50% confidence of refill; at 30% confidence, the volume increases. In response to a question from Ron Boyce, Henriksen said the River Forecast Center's April final forecast for Dworshak is approximately 250 kaf larger than the Corps forecast. Have you tried to reconcile the differences between the two forecasts? Boyce asked. They're different models, and different techniques, Henriksen replied. Norris added that the Corps forecast is more focused and basin-specific than the RFC forecast.

Looking at the two different forecasts last week, and discussing flood control operations, there was some confusion because of the discrepancies, said Boyce. I just wanted you to know I wasn't clear how the recent snowpack and precipitation events have been taken into account in the models, said Boyce. The flood control targets we're operating to now are based on protection, because there is a large snow-covered area in the Dworshak basin, currently, Henriksen replied; those calculations aren't really influenced by the water supply forecast. Boyce requested more details about how the Corps makes operational decisions

based on the satellite snow-covered area imagery. We'll address that under Agenda Item 9, said Henriksen.

Moving on, Henriksen said that, at Libby, assuming 50% confidence of refill, 418 kaf would be available for spring flow augmentation, over and above the planned 800 kaf sturgeon pulse. She reiterated that the current Libby water supply forecast is 5.4 MAF, right at the upper cusp of the Tier 1 sturgeon pulse criteria. If the forecast increases further, the pulse would increase to 1.1 MAF.

At Hungry Horse, assuming a 50% confidence of refill, 822 kaf would be available for spring flow augmentation, Henriksen said. Norris said the plan is to release 7 Kcfs from Hungry Horse through June; Hungry Horse has never been higher than it is, currently, in April, he added. And at Dworshak, you're continuing to release 4.5 Kcfs, and will maintain that through...? Paul Wagner asked. Probably through tomorrow, Henriksen replied.

***5. QADJ Summary Based on April Final Forecast.***

Henriksen reported that the QADJ model runs have now been updated and are available via hot-link from today's agenda on the TMT homepage. As you're aware, she said, this model initializes based on the March 31 elevation at each project, then shapes the April final water supply forecast for each project in 69 different ways, based on the historic record. According to the most recent QADJ run, Priest Rapids may be increasing flow soon for flow augmentation; and Lower Granite and McNary have virtually no chance of meeting their spring and summer flow objectives. Estimated flows at Lower Granite range between 22 Kcfs in late August and 61 Kcfs in May, compared to seasonal flow objectives of 85, 73 and 50 Kcfs; McNary flows are estimated to range between 118 Kcfs in late August and 181 Kcfs in May, compared to seasonal flow objectives of 220 Kcfs in spring and 200 Kcfs during the summer period.

In response to a question from Boyce, Henriksen said these model runs assume that Bonneville will meet an average flow of 125 Kcfs through the end of April, to protect emerging chum below the project.

Period Average Flow – Kcfs (ESP/HYSRR):

| | Apr 16-30 | May | June | July | Aug 1-15 | Aug 16-31 |
|---|---|---|---|---|---|---|
| Libby | 4.0 | 5.0 | 20.8 | 18.3 | 18.6 | 16.6 |
| HGH | 6.0 | 5.4 | 5.1 | 5.5 | 5.6 | 4.4 |
| GCL | 100 | 110 | 118 | 129 | 110 | 107 |
| PRD | 109 | 127 | 130 | 134 | 113 | 110 |
| DWR | 8.7 | 9.9 | 3.8 | 10.1 | 10.1 | 9.2 |

| | | | | | | |
|---|---|---|---|---|---|---|
| BRN | 14 | 15 | 12 | 10 | 12 | 13 |
| LWG | 56 | 78 | 57 | 32 | 28 | 27 |
| MCN | 168 | 205 | 190 | 170 | 144 | 139 |
| TDA | 175 | 200 | 184 | 167 | 143 | 139 |
| BON | 178 | 202 | 187 | 169 | 144 | 140 |

Moving on to the Corps HYSRR/ESP model work, Henriksen said this model overlays 44 historic weather conditions – temperature and precipitation – on the current reservoir elevation and water supply forecast data. The same project operations are assumed as were assumed in the QADJ run, she said. So you're saying we have 44 different runoff forecasts, 44 different historic weather patterns and 44 different shapes? Boyce asked. Correct, Henriksen replied. How is that relevant to 2005? Boyce asked. I don't know what the future holds, Henriksen replied; this gives me, as a water manager, some idea of what the bookends are. It is a bit mind-boggling, but this is the wave of the future, in terms of modeling tools. As a water manager, it makes me nervous to rely on a single modeling tool. With the STP model, I know that the forecast will not match the actual conditions, she said. What this ESP tool gives me is targets and interim operations I can keep in mind while making operational choices, said Henriksen. I wanted to bring this tool forward because it's a tool the Corps will be moving to exclusively in the future, and I wanted to start to get the TMT used to looking at this information. Think of it as assigning an exceedence probability to your optimism, said Norris. The ESP forecast is certainly more optimistic than the QADJ run on the Lower Snake, Boyce observed.

What's the game plan from here on out? Boyce asked. We will continue to update the HYSRR/ESP runs as future water supply forecasts become available, Henriksen replied. The ESP run is notably more optimistic, said Wagner – any idea why? Because the ESP run factors in potentially large future precipitation, replied Norris – the QADJ run generally assumes normal precipitation or less. The ESP/HYSRR model is influenced by recent precipitation events, Henriksen added.

On the QADJ summary, with respect to refill probabilities, you show Libby refilling in 95% of the years, said Martin – in the ESP run, Libby's probability of refill is only about 50-55%. If you look at the range of Libby's potential inflow, it has to do with the varying volume of precipitation and inflow in the future, based on historic weather data, Julie Ammann replied – they're two different tools. Also, what do you assume for Banks Lake? Kyle Martin asked. We do the same Banks Lake operation every year, Ammann replied – we factored in a 5-foot draft of Banks Lake this year. She added that the April 1-15 period average flows shown in the table are more accurate in the ESP/HYSRR runs than they are in the QADJ runs.

The group devoted a few minutes of discussion to the process through which the ESP runs are created; Ammann described the process. In response to a question, she said it should be possible to re-run the model in about a day if it is re-initialized using up-to-the-minute flow and forecast data. In response to another question, Henriksen said it would be possible to convene a “class” in the ESP model, to give the TMT a better idea of how the actual model runs are generated.

***6. Operations During Low-Flow Years.***

David Wills said that, in the most recent chum survey (dated April 1), the total number of chum seined was 67; in the two most recent seine surveys (not yet posted to the FPC website), field personnel found 109 and 28 fish, respectively. It does appear that emergence is winding down, said Wills. The peak in Hardy Creek occurred during the week of March 12; they are now thinking of pulling that trap in the next week or so. At Hamilton Springs, where the adult counts were higher, the emergence peak seemed to occur during the latter part of March. Counts have been dropping steadily since then. The peak catch in March was almost 16,000; the count last week was about 4,000, and is expected to drop to about 2,000 next week. Overall, said Wills, emergence appears to be tracking about a week earlier than last year.

Last week the salmon managers said they wanted to look at another week’s worth of data before making a decision about the start of spill at Bonneville, said Silverberg – do you feel comfortable making a decision about that at this point? I think the salmon managers would like to have a chance to discuss this week’s data, and make a decision by the end of the week, Wills replied. In response to another question, Boyce said TDG was measured at 102.7% yesterday at the Multnomah Creek spawning site, well, within the tolerable limit. In other words, said Boyce, it appears that we have some leeway, in terms of TDG, to start spill at Bonneville.

Do you have an estimate of the percentage of the run that has now emerged? Larry Beck asked. We’ll only know that after the season, Boyce replied; historically, the 95% mark has been reached on April 23. There is considerable variation in the 95% date in recent years, said Boyce, but the bottom line is that we will see chum continuing to emerge well into May. Wills said that, in his professional opinion, the 2005 chum emergence is now right around the 95% mark. However, we could see a bump in chum numbers, said Boyce – it’s really premature to say we’ve reached the 95% point in the emergence. In response to a question from Henriksen, Wills said Batelle is monitoring chum temperature units this year. Boyce noted that the third week in April was the most recent estimate of the 95% emergence point based on Batelle’s temperature unit model.

Moving on, the group discussed the start of Bonneville spill. Is April 15 still the target date? Silverberg asked. We would like to lay out a presumptive path to begin 24 hours of 50 Kcfs spill this Friday, said Boyce. We will look at the most recent seine catch, TDG and passage data and make a decision tomorrow, he said. We're set up to start spill on Friday, said Wellschlager, but the more advance notice we have, the better.

Henriksen said there is an issue with the corner collector. We're assuming that, at the same time we start spill, we will open the corner collector; however, the crane needed to open the corner collector needs some work, and we have to have a contractor come out to open the corner collector. The contractor is poised to do that on Friday afternoon, she said, so if the decision is made not to spill on Friday, for whatever reason, we will still have corner collector spill over the weekend. Could he open the corner collector earlier, in the morning? Wagner asked. We were assuming that spill would begin at 6 pm Friday, Henriksen replied; it will take the contractor several hours to set up and test the crane.

The fact that current TDG levels are 102% over the redds, and the limit is 105% without depth compensation, doesn't worry you, as we talk about starting spill? Wellschlager asked. Jim Adams noted that, at Warrendale, TDG levels have been approaching 106% in recent days. We timed this to coincide with a low tide, so this is a worst-case scenario, said Boyce; I wanted to thank the Corps for agreeing to keep the tailwater elevation at 11.5 feet so that we can sample Friday morning. I think we're going to be OK, with respect to TDG, as long as flows are maintained, said Boyce. To summarize, we appreciate the coordination needed to start spill of 50 Kcfs 24 hours a day, with corner collector operation, at 6 pm on Friday, Boyce said. If anything changes, we will let you know by tomorrow morning. In response to a question from Wellschlager, Boyce said the salmon managers would like to see full BiOp spill at Bonneville some time next week; the salmon managers will make a decision on Tuesday morning. Wellschlager said he will plan on full BiOp spill at Bonneville beginning next Tuesday evening, April 19.

Has spill been initiated at the other projects, as we discussed last week? Boyce asked. At Ice Harbor, the RSW test is continuing through April 23, said Henriksen; we have been spilling according to the UPA at night at that project. Spill started at McNary and John Day on Sunday evening. Spill started at The Dalles on Monday; spill has averaged 38.5%-39.9% over the first two days of this operation.

Moving on to the shape of flow at Priest Rapids, Henriksen said that the QADJ runs show flows of 110 Kcfs in the latter part of April and 130 Kcfs in May at Priest Rapids; flows at Priest Rapids would then recede in June to allow Grand Coulee to refill to 1285. We wanted to be sure that met with the salmon managers' expectations, she added. We talked about this yesterday, said Wills, looking at the newest QADJ and ESP runs, I think if we keep to the plan outlined

in the ESP run, these projected flows look all right. Our preference would be to keep the flows at a relatively low level until we see a significant increase in passage at Rock Island some time in May.

That raises an issue for Reclamation, said Norris – the flow you pick for the latter part of April will have an effect on Grand Coulee elevations. At the moment, we're seeing little to no passage at Rock Island, said Wagner – there is no reason to go above 90 Kcfs to 110 Kcfs until the last week in April. How about Earth Day – April 22, he said. It was agreed that the action agencies will increase Priest Rapids outflow to 90 Kcfs now, and prepare to go to 110 Kcfs on April 22. And if it looks like we can do better than refill to 1285, what sort of a threshold would you be looking at in June? Norris asked. We'll have to play that one by ear, Wagner replied – we'll be monitoring the passage situation closely, and will ask you to put the water on the fish. In response to a question from Ammann, Wagner asked the Corps to model flows above 120 Kcfs in June, to show the impacts on Grand Coulee refill. Boyce emphasized that the salmon managers have not yet built a consensus recommendation for Priest Rapids/Grand Coulee operations for spring or summer.

***7. CRITFC 2005 River Operations Plan.***

Martin reminded the group that, two weeks ago, CRITFC requested formal comments from the action agencies on the River Operations Plan; he asked where the action agencies were in that process. We have reviewed the plan, replied Norris; you will be receiving an official letter from us soon. He said that, in general, he had noted several areas where the River Operation Plan's recommendations collide with the action agencies' legal and operational obligations. I would say that two weeks is a little short in terms of the time-frame for an official written response, due to the necessity of subjecting that letter to inter-agency review, Norris said.

***8. WMP Spring/Summer Update.***

Since we now have the April final water supply forecast, our final step on the spring/summer update is to incorporate that information in our flood control rule curve calculations etc., Henriksen said. We have not received any additional comments, so our plan is to finalize the update with technical inputs based on the April final forecast. We'll hope to get that out on the homepage by the end of the week, she said.

***9. Status of Operation.***

Henriksen reported that, currently, Libby inflows are up a little bit, to 5-6 Kcfs. the project has filled about a quarter of a foot to 2413.5 feet, and continues to release minimum outflow. At Grand Coulee, the current elevation is 1253.8,

said Norris; Hungry Horse is at 3550.8 feet, and will begin releasing 7 Kcfs tomorrow. At Dworshak, the current elevation is 1585.4 feet, with 8 Kcfs inflow and 4.3 Kcfs outflow, full powerhouse discharge with the two available units, Henriksen said. The larger Unit 3 is now available, so powerhouse capacity is closer to 10 Kcfs. Flow at Lower Granite has increased to about 40 Kcfs. At McNary, flows have been running about 120 Kcfs; at Bonneville, 125 kcfs. The recent rain events have increased flows in the lower river; we had 149 Kcfs at Bonneville on Monday.

With respect to TMT feedback on the Corps' graphs and visual media, Wagner said he had emailed his two choices to Henriksen. I also received feedback from Dave Wills, and have forwarded that information to our modelers, said Henriksen. One comment was a request that we look at a subset of the 44 historic Dworshak water years that were closest to the conditions we're seeing this year, said Henriksen; unfortunately, the Dworshak data is part of a larger, multi-basin data set, so if we choose very low years at Dworshak, then we would have to choose the same water years for the entire basin model. Then the entire basin model may not meet our expectations. We're continuing to look into that possibility to see what subsets of data may be modeled in the future, however, she said. Silverberg asked that the other salmon managers review the seven graphs (appended to the March 16 agenda on the TMT homepage) and provide any votes or comments they may have to her as soon as possible.

Moving on to Dworshak flood control, Silverberg noted that the TMT had expressed concern about how the Corps was using the snow-covered area estimates to determine flood control operations at Dworshak. We revisited that on Monday, said Henriksen; the NRCS collects that data, and had someone in the field on Monday, and it was snowing. He said that, if he had to guess, he would say that the snow-covered area is now 100%. We agreed to continue to assume a 40% snow-covered area, which puts the April 15 flood control target at 1287.5 feet, she said; again, the third unit is now available, so we can increase Dworshak outflow further if needed. Our concern, of course, is that we could get a rain event on top of this snowpack, causing a large runoff event; bear in mind that the current volume to fill at Dworshak is only about 250 kaf. If a significant rain event was to occur, we could find ourselves in a high flow/forced spill situation, and that's what concerns us, Henriksen said. We're expecting to start using the third unit to start moving more water out of the reservoir some time later today or tomorrow, so that we don't fill too quickly, she added. Wellschlager added that Dworshak is higher, currently, than it has been on this date in any of the four previous years. In response to a question, Ammann said the Corps' plan is not to start drafting Dworshak at this point – if inflow is 8 Kcfs, we're not going to go to 10 Kcfs outflow. We do want to slow the fill at Dworshak, however, she said.

Boyce asked what local flooding risks the Corps is obligated to consider, as well as for more details on the current snow-water equivalent data. Henriksen

said the Corps and NRCS did take the snowpack/snow-water equivalent estimates into account when developing the April 15 flood control target for Dworshak; the overall goal is to avoid spill at the project. Having the third unit online, which gives us nearly 10 Kcfs in powerhouse capacity, helps us there, she said. With respect to local flooding concerns, if we look at the Dworshak flow augmentation bar chart there is 276 kaf available in the reservoir; 1.2 MAF is expected to run off in the basin between now and June. If we were in a serious flood control situation, we may have to spill up to 25 Kcfs. Flow at that level causes bank stability concerns; it can also damage structures on the river, such as bridge abutments. Flows of that magnitude also cause very high TDG levels downstream, she added. We will do that for flood control, if we have to, but we will avoid that situation if we can. Henriksen added that an expert from the Corps' Walla Walla District will be in attendance at the next TMT meeting to discuss the Corps' methodology in developing its flood control elevation targets.

Moving on, Wills said that, with respect to fish, as far as he knows, the Dworshak Hatchery release went well last week. Wagner said that, elsewhere in the system, at Lower Granite, the subyearling chinook passage indices have been steadily increasing, from about 1,000 fish a week ago to more than 19,000 fish yesterday. At McNary, the index is holding steady at about 1,200 fish per day. The yearling chinook numbers are on the rise at Bonneville, but the subyearling numbers have decreased over the past few days, which was somewhat unexpected. Coho and steelhead numbers are increasing at Bonneville; steelhead numbers are also increasing at Lower Granite.

On the adult side, Wagner said only 199 spring chinook have passed Bonneville to date; the 10-year average for this date is closer to 20,000 adults. No one knows why passage is so much lower this year; there are a variety of theories, including the large number of sea lions that have journeyed upriver to Bonneville this year. Cindy LeFleur said that, normally, by this date, about 13% of the spring chinook run has passed Bonneville; the 10-year average daily passage index is about 5,000 adult chinook, compared to the 57 fish that passed the project yesterday. She added that 80% of the 2005 run is composed of 4-year-old fish from the 2002 brood. Larry Beck noted that some California sea lions have taken up residence in the fish ladder at Bonneville and have even been seen in the counting windows; the most recent estimate he has heard is that they are taking 1-2% of the adults passing Bonneville. Wills said Robert Stansell has been tracking marine mammal predation for the Fish and Wildlife Service; Beck said he will invite Stansell to give the TMT a presentation on his research on April 27.

Wellschlager said there are no power system issues to report at this time. Adams said there are no water quality exceedences to report; for the most part, the spilling projects are well below their TDG caps. We will continue to track TDG levels at Warrendale until BiOp spill begins next Tuesday, Adams said; currently, I am looking at the Bonneville tailwater and TDG data and calculating depth

compensation over the chum redds on an hourly basis. Wills said it would be helpful if Adams could continue to do that through the end of April, when all of the chum will have emerged. In response to a question, Laura Hamilton said she expects to see TDG increase by 3-4% once Bonneville starts spilling 50 Kcfs.

***10 Next TMT Meeting Date.***

The next face-to-face Technical Management Team meeting was set for April 27. Meeting summary prepared by Jeff Kuechle.

**TMT PARTICIPANT LIST**
**April 13, 2005**

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