

COLUMBIA RIVER REGIONAL FORUM

TECHNICAL MANAGEMENT TEAM

June 15, 2005

FACILITATOR'S SUMMARY NOTES ON FUTURE ACTIONS

Facilitator: Donna Silverberg

Notes: 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.

Comments on Notes

There were no comments on the notes at this time.

Hanford Reach Update

Russell Langshaw, Grant County PUD, reported that Hanford Reach operations were completed on June 14. Over the previous two weeks, the target delta was missed over Memorial Day weekend, and then on June 7, due to increasing flows. An additional weekend of protection flows was completed June 4-5, per coordination between the PUD and NOAA. NOAA expressed appreciation for the operation. It was noted that BPA provided over 100 kcfs on May 30 in addition to the 'extra weekend' protection flows.

ACTION: Russell will send a final report on Hanford Reach agreement operations, upon completion, to Cindy Henriksen, COE, to distribute to TMT.

Priest Rapids Flows:

Flows reached an average 124.7 kcfs last week, and there is an expectation that the target 120 kcfs will be maintained through June, while filling Grand Coulee.

Sea Lion Presentation

Bob Stansell, COE, presented a power point on sea lion activities and research at Bonneville Dam from 2002-2005. From an historical perspective, it is not unusual to observe sea lions in the area. Lewis and Clark noted hundreds as far upriver as Celilo Falls. Researchers, during the 2002-present study, looked at timing, numbers, consumed salmon and pinniped behavior, finding that the mammals are arriving earlier and staying longer in the area. In 2005, pinnipeds consumed about 3.6% of the run observed at Bonneville, roughly 3,000 fish. The sea lions appear to start taking fish before the peak of the run, and in 2005, stayed on through the peak. They consume mostly spring chinook, followed by lamprey (which has increased in recent years), and shad. The mammals have been seen eating steelhead, smolts, bass, sucker sturgeon and Northern pikeminnow. Many are 'repeat offenders' that return year after year. New behavior was observed: The pinnipeds are eating near the dam, entering the fishways and "hauling out" on the spill bay. To remedy the pinniped problem in 2005, harassment measures, acoustic deterrents, and entrance exclusion gates were employed. Hazing was initially effective but lost its

effectiveness over time; use of high pressure water was found to be ineffective, and acoustic deterrents may be the best tool that does not appear to adversely affect fish passage. Special thanks were given to the COE, USGS and University of Idaho for their efforts this year.

In early and mid-May, NOAA, ODFW, WDFW and the COE tried harassment efforts in the Bonneville tailrace, which worked initially but the pinnipeds eventually returned. Hazing efforts will likely continue next year.

Next Steps: The COE is involved in internal discussions and will work with NOAA and the states to develop a policy for marine mammal management. The predation on both listed salmon and sturgeon creates a problem needing resolution.

Summer Spill Operations Given Recent Court Decision

The judge's decision on June 10 ordered the COE to implement summer spill at Little Goose, Lower Monumental, Lower Granite, Ice Harbor and McNary; this order is a deviation from the COE's previously anticipated 2005 summer spill operations. The COE is requesting input from the Regional Forum technical teams on how to implement the directed spill. Given the judge's order to "spill up to minimum station service (1% peak efficiency)", the COE has concerns that CWA and state standards may be exceeded. Cindy reported that, per discussions at the WQT on June 14, Washington DOE and Oregon DEQ recommended that the spill operation not exceed the states' TDG standards (120% at the Lower Snake projects). The COE's biggest area of concern, based on SYSTDG modeling, was at Lower Monumental, where the model shows TDG levels reaching 121-125% with 10-15 kcfs spill. The COE recommended an alternative operation that would start in a range (to be determined) that would stay within the TDG standard, and modify the operation up to reach the spill cap. (Because the court ordered operation has never been modeled before, the error band is not available; the model showed that this operation would produce a 12-hour average of 121-125% TDG at Lower Monumental.)

TMT members provided initial input to the COE on a spill pattern at Lower Monumental, which the COE will take into consideration as they draft a summer spill implementation plan to take back to the Plaintiffs:

- Washington – A letter was drafted and distributed to the WQT. It recommends not exceeding state water quality standards, and proposed an incremental spill operation that would ensure that TDG is not exceeded. The standards were developed for biological reasons.
- Oregon – Will wait to comment further after talking with the Oregon WQT representative on water quality standards and upon review of the proposed spill plan from the COE.
- Montana – Stay within state waivers, and agrees with COE's proposed concept for operations.
- CRITFC – No comment yet on how to proceed; do not exceed TDG standards.
- USFWS – Defer to the states (stay within the standards); defer to the states re: implementation of spill.

- NOAA – Stay within the state waivers; no comment on how to implement as yet.
- BPA – Honor the water quality standards, and be conservative with operations.
- BOR – Support staying within the standards.

Also, proposed research at the projects, which may be impacted by the spill operation, is being discussed at SRWG; at this point, the COE offered that some research will likely occur. As far as spill patterns at the other projects, the COE will put in an initial proposal based on the FPP and plan to discuss these further in the future.

ACTION: The COE will put together a draft summer spill implementation plan, considering input from participants at the Regional Forum, and share it with the Plaintiffs in the next few days. Cindy will forward the draft plan to TMT members. This will be on the agenda at the next TMT check-in call on Wednesday, June 22.

McNary Operations – Spill/Transport

The spring to summer operation transition at McNary usually occurs around June 20. At this point, the project is below flow thresholds for ‘spring-like conditions’ and temperature is hovering at the threshold of 62°. Spill will occur on July 1 at McNary as per the judge’s order. The COE requested feedback from TMT on how to proceed from June 20-June 30 in terms of transporting fish at McNary.

NOAA recommended that the fish NOT be collected for transport this week, given the current temperature conditions, and suggested the TMT check-in on the issue next week to make a next step determination. The COE noted that the current flow conditions are well below 200 kcfs, or ‘spring like’. USFWS concurred with NOAA’s recommendation, as did Montana. (Oregon and Washington were no longer on the call during this discussion.) The action agencies agreed to wait, and requested that the salmon managers consider alternative operations. BPA added that if temperatures reach 62° or above, TMT should have a check-in call on Monday, June 20 to discuss how to proceed.

Dworshak Hydro and Water Temperature Modeling

Kyle Martin, CRITFC, provided a handout of initial modeling for summer Dworshak operations based on three scenarios – Nez Perce/Idaho proposal (1535’ by 8/31 and 1520’ by 9/30); TMT 2004 operation (‘blend of Nez Perce/Idaho and BiOp proposal); and 2000 BiOp (1520’ by 8/31). The purpose of the exercise, he said, was to help TMT get ahead of and begin planning for 2005 summer operations. Kyle offered to do additional scenarios for future TMT meetings, per suggestions from the group.

TMT members offered initial comments:

- Not sure if it is useful to run additional models at this point, since we will need to make real-time adjustments.
- Gives an idea of how shaping Dworshak could create cooling throughout the summer. Addressing the temperature rise early before the peak will be helpful.

- Shows when the potential problem times for temperature might be in July and August.
- Suggestion – extend the model through the end of October for fish managers to see what might occur after the summer.

ACTION: Cindy Henriksen, COE, reported that there will be 200 kaf storage from Dworshak for use by the Nez Perce in September. The Snake River Basin Adjudication group looking at how that water might be used. Proposals on this will be available for TMT to discuss at the June 29 TMT meeting.

SOR 2005-15 Follow Up

Cindy Henriksen, COE, reported that a response was sent out in regards to SOR 2005-15 presented at TMT on June 8, saying that the COE operated within the criteria to deal with increasing mortalities at Lower Granite due to debris load issues. Following the SOR (drafted on June 2), decreases in mortality occurred, then another increase in mortalities occurred. There was inquiry into why this was happening. Dave Wills, USFWS, checked with the FPC and smolt monitoring group and reported that there was a release from the Nez Perce tribal hatchery on May 7 due to a local flooding event, and smaller than usual spring chinook subyearlings were passing at the same time.

ACTION: The action agencies requested that, in the future, the salmon managers coordinate on issues like these so that they do not need to be addressed through the TMT. Also, notify the action agencies if there is a change in hatchery releases so that preventative measures can be taken to avoid future problems such as these.

Based on current conditions, the salmon managers suggested that it was acceptable to go back to operating under the Fish Passage Plan at Lower Granite, thus ending the request laid out in SOR 2005-15.

Operations Review

Reservoirs—Inflows are high, reservoirs are reaching full. Libby is at 2450' with 35 kcfs inflows and 24.7 kcfs out. The project may not go below powerhouse capacity until mid-July or later due to limited transmission issues and higher flows. Hungry Horse is at 3558.4' and releasing 3.6 kcfs. Grand Coulee is at 1283.7' and filling.

Snake River volumes are up – Payette and Cascade filled and are releasing above irrigation. At this point, the BOR is expecting 321 kaf for augmentation, and possibly additional volumes (negotiations are ongoing).

Priest Rapids flows are scheduled to stay within a 5 kcfs range. However, flows may increase due to increased water in the system. Dworshak is at 1598.89', with fluctuating outflows due to transmission limitations. Lower Granite flows are at 50 kcfs and receding. McNary average flows were 169 kcfs yesterday (6/14).

Fish – Juveniles: Yearling migration is at the tail end, normal compared to previous years. The subyearling run is very early this year and the numbers are high so far.

Adults: There have been increased chinook counts at Bonneville. The spring run is expected to reach about 100,000 this year (lower than projected). There is hope for a strong summer adult run.

Power system – The CGS is 100% back on line, on schedule.

Water quality – Three exceedances occurred from May 31-June 13. Gas caps have been posted to the TMT web page.

Next Meeting, Conference call Wednesday, June 22, 9:00 am

Agenda Items include:

- Summer Operations check-in
- McNary Spill/Transport
- Dworshak Temperatures

Next Face to Face Meeting, Wednesday, June 29, 9am-noon

Agenda items include:

- Summer Operations check-in
- Dworshak operations
- Libby operations
- System Status
- Temperature/flow and 200 kaf

1. Greetings and Introductions.

The June 15 Technical Management Team meeting 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 topics discussed and decisions made at today's meeting. Anyone with questions or comments about these notes should contact Henriksen at 503/808-3945.

2. Hanford Reach Update.

Russell Langshaw reported that the 2005 Hanford Reach fish protection program ended yesterday, June 14. During the past two weeks, there were a few misses; we slightly exceeded the 30 Kcfs flow band on May 31, and also on June 7. Average flow for the week ending June 5 was 112.1 Kcfs; for the week ending June 12, it was 115.7 Kcfs. As promised, we did do an additional weekend of the protection operation, on June 4 and 5, maintaining a minimum of 108.7 Kcfs at Priest Rapids, Langshaw said. On May 30, Bonneville provided an estimate of 100 Kcfs out of Chief Joseph, but actually provided 102 Kcfs, said John Wellschlagel. Since you've reached the temperature unit thresholds, I take it that this will be your last weekly report for 2005? Henriksen asked. Correct, although I will be providing a final post-season report, Langshaw replied. I'll post it to the TMT website once it's available, said Henriksen.

3. Priest Rapids Flows.

Things are looking good, said Tony Norris – we said we would be at 120 Kcfs at Priest Rapids last week, and actually delivered 124.8 Kcfs. It looks as though we'll be able to maintain 120 Kcfs through the end of June, as Grand Coulee touches full, he added. That works for us, said Paul Wagner.

4. Sea Lion Presentation.

Robert Stansell led this presentation, titled "Evaluation of Pinniped Predation in the Bonneville Dam Tailrace, 2002-2005. Using the overhead projector, he touched on the following topics:

- Bonneville Dam location (map)
- Historic perspective – Lewis and Clark documented the presence of marine mammals, primarily harbor seals, all the way up to Celilo Falls, at the beginning of the 19th century
- Location of pinniped observations, Bonneville Dam, 2002-2005 (map)
- Objectives: seasonal timing, abundance of pinnipeds, estimate number of salmonids consumed
- Seasonal distribution of pinnipeds at Bonneville, 2002-2005 (observations began in February, ended on June 10)
- In 2002, there were 58 days of observations; that increased to 101 days in 2005
- Abundance estimates – increased from 30 in 2002 to 80-90 individuals in 2004 and 2005
- Maximum and mean pinnipeds observed – daily max increased from 14 in 2002 to 43 in 2005; the daily mean increased from 5-6 in 2002 to 21 in 2005
- Number of days individual pinnipeds present – mean days increased from 4.7 in 2002 to 8.4 in 2005; the range of days increased from 1-14 in 2002 to 1-39 in 2005
- Predation impacts at Bonneville Dam – photos of sea lions eating salmon, sturgeon and lamprey
- Estimate of the number and percent of salmonids caught by pinnipeds at Bonneville Dam from January 1-May 31 – 929 fish, or 0.3% of total population in 2002, increased to 3,052 fish, or 3.6% of the total population, in 2005. Stansell emphasized that these numbers are based on actual observations in the Bonneville tailrace only.
- Percent of salmonids that were caught (by pinnipeds) but escaped – decreased from 11.9% in 2002 to 0.8% in 2005
- Number of salmon passing and number taken by pinnipeds at Bonneville, 2002, 2003, 2004 and 2005, by week (graphs) – the take-home message is that the sea lions arrived earlier in 2004 and 2005, and stayed longer
- Percentage of salmonids caught by pinnipeds, by location and percentage

of salmon passing – the majority of fish caught at Powerhouse 2 (45%), but significant numbers (33.2% and 21.8%) caught at Powerhouse 1 and in the spillway, respectively

- Salmonid catch rate at Bonneville Dam (table)
- Prey taken by pinnipeds – primarily spring chinook, followed by lamprey, shad, steelhead, smolts, bass, sturgeon, sucker and Northern pikeminnow. The prey percentage accounted for by lamprey increased from 5.4% in 2002 to 25.1% in 2005.
- Number of highly identifiable pinnipeds that were seen to return to Bonneville in subsequent years – in 2004, 11 of 16 sea lions originally seen in 2002 and 36 of 72 originally seen in 2003
- Entered fishways in 2005, the first time this behavior has been seen
- More haul-out sites in 2005
- Sea lions entering fishways – one individual, C404, entered one or both Bonneville fish ladders every day from March 11 to March 31. A total of 9-10 different sea lions were observed in one or both of the fishways in 2005
- Actions to keep sea lions out of fishways at Bonneville Dam, 2005 – harassment (above-water pyrotechnics, rubber bullets, high-pressure water), acoustic deterrent, entrance exclusion gates.
- Results of 2005 hazing – initial hazing effective, lost effectiveness over time; high-pressure water not effective due to distance to target; acoustic deterrent was effective (installed April 21, no sea lion observed above that area since); sea lion exclusion devices (SLEDs) installed by May 30.
- Results of tailrace hazing (rubber bullets and above-water pyrotechnics) – sea lions chased out of tailrace initially, returned within hours of stopping hazing

Stansell offered the following summary points:

- Pinnipeds arriving earlier each year
- Individuals staying for longer period
- Increasing average number of pinnipeds/day
- Increasing number of salmon taken
- Increased percentage of lamprey in diet
- Number of salmon escaping decreasing

What's the population trend for California sea lions? asked Dave Statler. the total population is 200,000-300,000, as high as it's ever been, and increasing by 10% a year, Stansell replied. In response to another question, Stansell said NOAA has found an effective way to deal with the Ballard Locks sea lion problem. They tried relocating the sea lions to as far away as California, but they just swam back. Eventually, the problem sea lions were taken to Sea World in Orlando. Now they use an acoustic barrier that effectively discourages "naive" animals. Sea lions typically live into their teens, or even into their 20s, he said. Stansell added that, while the California sea lions are a healthy population, their larger relatives, the stellar sea lions, are threatened.

Are there any other plans for the future, in terms of discouraging sea lion predation? Wellschlagler asked. There are obviously some policy-level challenges and issues, replied Rock Peters; the Corps needs to sit down with NMFS and others to work on our options. It's going to take some time, he said.

5. Summer Operations as a Result of the Recent Court Ruling.

Henriksen said that, as the TMT is aware, Judge Redden issued a ruling last week ordering the Corps to spill this summer at the four Lower Snake projects and at McNary. Usually we don't spill at three of the Snake River projects during the summer, but this year, we will, she said. The SRWG met Monday, to discuss the ongoing RSW research at Lower Granite and Ice Harbor. They haven't yet given us their final recommendation, but it will have an effect on the summer spill program, she said. Our default spill pattern at Little Goose and Lower Monumental will be the pattern identified in the Fish Passage Plan, unless FPOM decides there is a better pattern to use, she said. A group will be going to Vicksburg to examine that question using the physical models.

The order from the court was that we spill all river flow above that needed for station service, Henriksen continued; that means we would be operating one unit at each project at the low end of peak efficiency. Those minimum generation requirements are 9.5 Kcfs at Ice Harbor, 11.5 Kcfs at Lower Granite, Little Goose and Lower Monumental, and 50 Kcfs at McNary. The Corps has some concerns that this volume of spill at Lower Monumental will exceed the state TDG standards. At yesterday's Water Quality Team meeting, it was made clear that the regional forum participants do not want to see the state standards exceeded, she said.

For the operation, which will begin Monday, our proposal is to begin fairly conservatively at Lower Monumental, and implement an operation that will bring us gradually up to the 120%/115% state standards without exceeding them, Henriksen said. We will then modify the operation to get as close to the state standards as possible. A meeting with plaintiffs is scheduled for Thursday or Friday, at which we will present our proposal and discuss it, she added. Tom Lorz noted that the plaintiffs have made it clear in their declarations and briefs that they want to see spill up to, but not in excess of, the state water quality standards.

Based on SYSTDG model runs and our experience on the river, given current flow of about 40 Kcfs in the Snake, the spill quantities above the station service minimum probably don't raise red flags for us, except at one project, Henriksen said. We know Lower Monumental generates dissolved gas. The starting quantity of spill at that project will probably be 10-15 Kcfs, about half of total river flow above station service. We'll work up from there, she said – it's easier to work up than down, after an exceedence occurs. So at all projects,

you'll spill as per the court order, with the exception of Lower Monumental? Ron Boyce asked. That's the plan, said Henriksen – we don't want to begin with an immediate exceedance at Lower Monumental. We will check the data every day and make adjustments accordingly, Henriksen added.

What's the model prediction, in terms of tailwater TDG levels, if Lower Monumental spills 10-15 Kfs? Margaret Filardo asked. The model results are based on the bulk pattern at normal operations, Laura Hamilton replied. We have not had field experience with summer spill operations at that project before, so we don't know the percent of predictive error. The model is based on observed data and conditions. If we spill at 10-15 Kcfs, the model predicts a 12-hour average of 120-124%. If we spill total river flow, that percentage increases to 121-125%. Again, however, we don't know the percent of predictive error associated with these model results, said Hamilton.

Based on my discussion with Washington's WQT representative, I had thought this discussion would take place at yesterday's meeting, said Bill Tweit – evidently it did not. Is the Corps' preferred spill alternative the recommendation of the Water Quality Team as well? We didn't discuss model reliability, replied Filardo; the question the Corps asked at that meeting was, should the water quality standards be exceeded? Jim Adams added that both WDOE and ODEQ made it clear at yesterday's meeting that they did not want to see the state TDG standards exceeded during this operation.

I don't see a lot of difference between the model results for spill of 10-15 Kcfs and spill of total river flow above the station service minimum, Tweit observed. The equations in the model are built on a flat flow, not a bulk flow, Hamilton replied. Also, during the summer, we would be spilling 65-80% of the river. We don't have the data to tell us what will happen under those conditions, she said, so we're taking a more conservative approach, in accordance with the guidance from ODEQ and WDOE. Our recommendation is to start at a lower percent of spill – about 50% of total river flow, at least initially, Henriksen added.

It seems to me that the guidance you got from WDOE at yesterday's WQT meeting was to go into the summer spill program incrementally, said Tweit – what I'm not hearing, in your presentation today, is how you think your preferred alternative is responsive to the direction you got from WDOE. I believe the Corps is trying to balance its operation to spill as much as possible while staying within the state water quality standards, said Wellschlager – they're trying to hedge a bit, in laying out the best scientific information they have, currently. I should also make clear that the SYSTDG model is only one of many tools we use to set our daily gas caps, Hamilton said. I think what Laura is saying is that, in-season, the Corps compares the model output to actual data to generate predictive error, observed another participant. That's correct, said Hamilton – sometimes the model predicts high, and sometimes it predicts low. I look at that predictive error daily in-season to calculate the spill caps, she said.

To summarize the Washington recommendation, it sounds as though you would like us to start at a lower spill volume that will get us close to the 120% tailwater TDG limit at Lower Monumental, but will not exceed it, Henriksen said. That's a fair summary, said Tweit. We would also expect the action agencies to use the available data on a daily basis to get us as close as possible to the state TDG standard, he said. Absolutely, Henriksen replied – that is the intent. Will the Corps be developing a written proposal that can be reviewed regionally? Lorz asked. We'll have something on the table tomorrow or Friday, whenever the conversation with the plaintiffs occurs, said Peters.

Does Oregon have any comments? Silverberg asked. We'd like to see the Corps' written proposal before commenting, Boyce replied. CRITFC, too, will provide technical review once a written proposal is available, said Lorz. David Wills said the Fish and Wildlife Service defers to the states, with respect to whether or not to exceed the state water quality standards. If the states agree that this is the best way to implement this operation, I think we would defer to that as well, he added. NMFS supports the concept of staying within the TDG waivers, said Paul Wagner – how we get there remains to be seen. Jim Litchfield said Montana agrees with the concept of structuring the summer spill program to avoid exceeding the state water quality criteria. Bonneville agrees with that concept as well, and with the concept of coming up to the TDG standards gradually, said Wellschlager. Tony Norris said Reclamation, too, supports staying within the water quality standard.

Will the RSW research at Lower Monumental and Ice Harbor go ahead as planned? Litchfield asked. That is still being discussed within SRWG, but some level of research will probably proceed in 2005, Henriksen replied. There is also the question of spill pattern – bulk vs. flat. We will have a starting proposal at tomorrow's meeting, she said. Have you evaluated the impacts of this operation once summer flows begin to recede? Tom Haymaker asked. We'll be evaluating that as the season proceeds, Henriksen replied.

6. McNary Operations.

This was put on our agenda as a result of the upcoming timeline, said Henriksen; normally, around June 20, we switch from a spring operation to a summer operation, which means stopping spill and starting transport, once "springlike" conditions end – total river flow declines under 220 Kcfs, and tailwater temperatures increase to 62 degrees F. Under the court order, McNary, too, is ordered to spill all river flow above the 50 Kcfs project generation minimum, beginning July 1. We would like to hear what the TMT thinks about McNary operations, she said.

The issue with respect to transport is that, normally, once "springlike" conditions are no longer present, all fish collected would be transported, said

Wagner – the question is, when should we begin transport at McNary? The Fish Passage Plan uses the 62-degree criteria to describe “springlike;” the TMT annually has to decide when we get there. I don’t think we’re there yet, said Wagner; conditions still seem to be adequate for the safe passage on in-river fish. I would suggest that we check in next week to see whether the 62-degree criteria has been exceeded, he said. Adams noted that current flows at McNary are about 170 Kcfs, significantly below the 220 Kcfs volume that is the other criteria used to define “springlike” conditions. Again, we feel that conditions are still adequately “springlike” to allow safe in-river passage, Wagner replied.

No TMT objections were raised to Wagner’s suggestion that the commencement of the McNary transport operation be deferred, at least until next week. Bonneville agrees, but if we see tailwater temperatures start to rise, to 62 degrees or above, we feel it would be appropriate to convene an immediate TMT call, said Wellschlager. It was agreed to schedule a TMT check-in call for next Wednesday, June 22.

7. Dworshak Hydro and Water Temperature Modeling.

Kyle Martin led this presentation (hot-linked to today’s agenda on the TMT homepage). He said the intent was to get a head start on the question of how the salmon managers would like to see Dworshak operated in 2005. We looked at three different scenarios, he said. Martin’s presentation touched on the following topics:

- Introduction
- Weather assumptions – mean monthly temperatures and departures, based on the historic record, ENSO and the PDO. According to long-term predictive tools, the summer of 2005 will likely be slightly warmer than normal
- Highlights of proposal: Nez Perce Tribe/Idaho (draft to elevation 1535 by August 31, then to 1520 by September 30); TMT 2004 plan (blend of Nez Perce Tribe/Idaho and BiOp plans); 2000 BiOp plan: draft to elevation 1520 by August 31
- Nez Perce Tribe/Idaho plan – Dworshak seasonal flows and Dworshak elevations, by week (graphs)
- TMT 2004 plan – Dworshak seasonal flows and Dworshak elevations, by week (graphs)
- 2000 BiOp plan – Dworshak seasonal flows and Dworshak elevations, by week (graphs)
- CRITFC modeling results – Dworshak and Lower Granite outflows, by month, and days of water temperatures greater than 20 degrees C at Lower Granite, NPT/ID, TMT 2004 and 2000 BiOp plans. Results: 19 days of temperatures >20 degrees C between July 1 and August 15 under the NPT/ID plan, zero days of exceedence August 16-September 30. TMT 2004 plan: 10 days of temperatures >20 degrees C between July 1 and

- August 15; zero days of exceedence thereafter. BiOp 2000 plan: zero days of exceedence for the July 1-August 31 period; 6 days of exceedence during September.
- Water temperatures, June 12-September 30, under the NPT/ID, TMT 2004 and 2000 BiOp plans (graphs)

Martin then offered the following conclusions:

- BiOp plan: drafts in July will lower lake levels at the fastest rate. High outflows in early July will slow Clearwater juvenile salmon growth. Benefits lower Snake River flows during July. Impacts late-migrating Clearwater juveniles and adults, especially with high water temperatures in September.
- TMT 2004 plan: drafts in July will lower lake levels, but not as fast. Modest rises in mid-July flows are followed by a stepwise reduction in August. September has a 157 kaf carryover from summer flows – not as much as prescribed in the NPT/ID plan, which calls for a 200 kaf carryover.
- Nez Perce Tribe/Idaho plan: better-timed outflows benefit juvenile and adult salmon while providing cooler water for the Lower Snake through September. Lake levels stay higher, longer.

Martin emphasized that this is only the beginning of the Dworshak modeling effort; he invited any TMT participants who would like to see different scenarios modeled to contact him directly. Litchfield observed that, given the fairly rigid operational criteria built in to each of these operational scenarios, he doesn't see a great deal of value to this modeling effort. Wellschlager replied that the value he sees is in predicting the temperature response at Lower Granite, given current weather conditions, river flow and Dworshak operations. We've learned that it is more effective to anticipate when temperatures begin to spike, he said, and to stay on top of that situation, rather than trying to cool things down after they've heated up. These results also show that July and the first week of August is likely to be the problem period, said Wagner, and gives us an opportunity to borrow water from the volume reserved for use in September if the temperature problem becomes severe.

I appreciate Kyle's work on this, said Henriksen; it's a good time to begin considering how we want to use Dworshak this year. I would remind the TMT that, under the Snake River Basin Adjudication agreement, 200 kaf of Dworshak storage is reserved for the Nez Perce Tribe for use during September. While that agreement has not yet been signed by the Department of Interior, the intent is to do a dry run this summer, she said, so it's a good time for folks to start thinking about how we want to operate Dworshak, particularly during the late-summer period.

Wagner added that it may make sense for the TMT to start thinking about Dworshak's release temperature; we may want to go to a cooler outflow before the end of June, he said.

8. SOR 2005-15.

On June 2, the action agencies received SOR 2005-15. This SOR, supported by USFWS, IDFG, ODFW, WDFW, NMFS, the Nez Perce Tribe and CRITFC, requests the following specific operations:

- According to the Fish Passage Plan, page LWG-10, paragraph 8, "When a head differential of 1.5' is reached, the respective turbine unit should be operated at a reduced loading, not more than 110 MW... clean VBSs as soon as possible." The salmon managers recommend that the COE operate to these specifications. We also recommend that the project follow up with video monitoring of the VBSs after raking trashracks to ensure that they are clear of debris.

Henriksen said the SOR raises the question of whether or not Lower Granite was operating within the Fish Passage Plan criteria; we checked, and one of the units had a head differential of 1.4 feet. We reduced loading on that unit over the weekend; by the following week, mortality decreased. Late last week, there was another incident of increased mortality.

With respect to upstream hatchery releases, some of the fish involved in last week's mortality incident were quite small, Henriksen said. That's the information we're getting from Lower Granite, added Larry Beck – the fish arriving at the project were much smaller than normal. I spoke with the Fish Passage Center and others, and queried the FPC database, said Wills; one group of subyearling spring chinook, 870,000 fish, from the Nez Perce Tribal Hatchery, had to be released early due to local flooding, and those fish were smaller than normal. None of those fish were PIT-tagged, but other fish released at the same time – 390,000 fall chinook -- were. Some of those tagged fish subsequently showed up at Lower Granite, so obviously some of the smaller spring chinook were arriving at Lower Granite during the period in question, Wills said.

Is there a system in place to warn the project personnel when these types of emergency releases of smaller fish occurs? Wellschlager asked. In this instance, it would have been helpful to the project to have a heads-up. It is reported on the FPC homepage, replied Filardo, but I wouldn't characterize the Nez Perce Tribal release as extraordinary. I think what John is saying is that, with some advance warning, the personnel at Lower Granite could have cleaned the screens and trashracks before those fish arrived, said Norris. Cathy Hlebechuk added that, in the future, it would be helpful if the salmon managers would communicate directly with the Corps if they have concerns about whether or not

a project is in criteria, before putting those concerns in the form of an SOR. It sounds, too, as though the action agencies would like to be notified when emergency releases of smaller hatchery fish occur, said Silverberg. After a few minutes of additional discussion, Wills agreed that there are no current fish mortality problems, and that, in his view, Lower Granite can return to normal operations. It was agreed that notification of early release of fish will occur via email.

9. Operations Review.

Henriksen said reservoirs are generally quite full, and due to continued precipitation, inflows are still quite high. Transmission system limitations are impacting Libby and Dworshak operations; we are running Libby at full powerhouse capacity. Libby is at elevation 2450, currently, with inflows of 35 Kcfs. Inflows will likely not drop below powerhouse capacity until early July, at the soonest. Inflows could be as high as 50 Kcfs by late June, she said, and powerhouse capacity at Libby is about 25 Kcfs.

Hungry Horse is at 3558.4 feet, said Norris; inflows continue to be high at that project as well. The project is releasing 3.6 Kcfs. Grand Coulee is at 1283.7 feet and filling nicely, with 160 Kcfs inflow. There is good news on the Upper Snake; it now looks as though we will have at least 321 kaf to release from the Upper Snake this summer, and that could increase to 400 kaf+. We may even get some water out of the Owyhee system this year, he added.

With respect to the Priest Rapids targets, generally, we can stay pretty reliably within 5 Kcfs of the target, said Wellschlager. However, because all of the reservoirs are full, if we get a significant precipitation event, there is nowhere to put that water, and we will have to increase Priest Rapids outflows.

Litchfield said Montana is still discussing summer operations at Libby and Hungry Horse; Montana is interested in stabilizing September operations to the greatest extent possible. I'll hope to have something concrete for TMT review at our June 29 meeting, he said.

Henriksen said Dworshak is at elevation 1598.9 feet; inflow continues to be in excess of 5 Kcfs. The project is releasing 4.3 Kcfs, currently; again, transmission system limitations are impacting our operational flexibility at Dworshak. The limitation is due to the need to clean insulators on a line in the Flathead Valley; the insulator-cleaning operation is expected to continue for about two more weeks.

Henriksen said Lower Granite flows are about 50 Kcfs and receding, currently; McNary flows were 169 Kcfs yesterday.

Moving on to fish, Wagner said that, according to the most recent fish passage indices, for combined yearling chinook, we're at the tail end of the run, with index numbers falling dramatically at the Lower Snake projects. With respect to subyearlings, about 1.5 million have passed Lower Granite to date, which is a very large number for this time of year. McNary indices, primarily Hanford fish, have been running about 50,000 fish per day. The bulk of that run is yet to come. For combined steelhead, again, we're at the tail end of the outmigration, Wagner said.

With respect to adult passage, Tweit said WDFW is heartened by the increased counts at Bonneville, mostly upper Columbia summer chinook. It looks as though the spring run accounting will end up at about 100,000 fish, far below the pre-season prediction, but better than the worst-case scenario. For spring chinook, the Ice Harbor count continues to be awful, but the Upper Columbia run looks better. Willamette counts continue to be fairly poor as well, so there is some indication that the problem is systemwide. What brood year isn't showing up this year? Beck asked. According to the initial scale data, most of the returning fish were 4s, Tweit replied; that means 5s and 3s were almost totally absent.

Wellschlager said the Columbia Generating Station is now back online. With respect to water quality, Hamilton said there have been only three exceedences in the past two weeks.

10. Next TMT Meeting Date.

The next face-to-face meeting of the Technical Management Team was set for Wednesday, June 29. It was agreed to convene a TMT conference call on June 22.

**TMT Participant List
June 15, 2005**

Name	Affiliation
Cindy Henriksen	COE
John Wellschlager	BPA
Paul Wagner	NMFS
Jim Litchfield	Montana
Ray Gonzales	COE
Tony Norris	USBR
Donna Silverberg	Facilitation Team

Lee Corum	PNUCC
Laura Hamilton	COE
Jim Adams	COE
Margaret Filardo	FPC
Dave Benner	FPC
Larry Beck	COE
Glenn Traeger	Avista
Mike Buchko	Powerex
Robert Stansell	COE
Dave Statler	NPT
Bill Tweit	WDFW
Cathy Hlebechuk	COE
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Bob Heinith	CRITFC
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