

**TECHNICAL MANAGEMENT TEAM
CONFERENCE CALL NOTES**

July 20, 2001

**CORPS OF ENGINEERS NORTHWESTERN DIVISION OFFICES – CUSTOM HOUSE
PORTLAND, OREGON**

TMT Internet Homepage: <http://www.nwd-wc.usace.army.mil/TMT/index.html>

1. Greeting and Introductions

The July 20 Technical Management Team conference call to discuss a potential summer spill program was chaired by Cathy Hlebechuk of the Corps and facilitated by Richard Forester. The following is a distillation, not a verbatim transcript, of items discussed at the meeting and actions taken. Anyone with questions or comments about these minutes should call Rudd Turner at 503/808-3935.

Forester welcomed everyone to the meeting, then led a round of introductions and a review of the agenda.

2. Technical Discussion of Potential 2001 Summer Spill Program.

Hlebechuk said she was hoping to get an update on the Council reliability analysis at today's meeting; Paul Wagner and Christine Mallette said it is not possible to re-do the analysis so quickly – the point at yesterday's conference call was simply that there is a desire to get that update as soon as possible, Wagner said.

The discussion then turned to spill and powerhouse minimums at Bonneville, The Dalles and John Day Dams. Bill Maslen said the region is looking at declining total river flows during the remainder of the summer, with flows during August and September projected to be record lows – in the 75 Kcfs-80 Kcfs range. The current powerhouse minimums are 30 Kcfs at Bonneville, 50 Kcfs at The Dalles and 50 Kcfs at John Day. Maslen added that minimum spill volumes are 40 Kcfs-45 Kcfs at Bonneville and about 25 Kcfs at The Dalles and John Day. The question is whether the spill can be distributed, given these extremely low flows, to provide a biological benefit, Maslen said.

So the proposal is 30% spill for 12 hours at John Day, 30% spill around the clock at The Dalles and 50 Kcfs around the clock at Bonneville, Wagner said. Again, my concern is tailwater hydraulics, given these very low flows, said Maslen – is that a concern, from the standpoint of fish passage and survival?

Rock Peters said the recent Synthesis report for John Day and The Dalles and Bonneville pulls together all of the available fish passage information at these projects. At John Day, based on those reports, we would estimate an overall reduction in subyearling chinook survival if we spill 30% for 12 hours at these very low flows, compared to survival under the current no-spill

conditions, Peters said. Powerhouse survival would likely be significantly reduced as well. Peters added that there is a fair amount of uncertainty about the John Day numbers.

At The Dalles, the story is different, because there is no bypass system at that project, said Peters. It looks as though 24-hour spill at 30% would produce about a 3% survival increase, from 87% without spill to 90% with 24-hour spill at 30% of total river flow. You're assuming similar spillway and sluiceway survivals? Maslen asked. They're very close, yes, Peters replied. Wagner observed that sluiceway predation is higher than spillway predation, particularly in summer.

Were you assuming a particular total river flow in your modeling? Hlebechuk asked. That's almost impossible to do, Peters replied; he explained that at John Day, he had an actual spring spill survival estimate of 98%; he doubled the mortality for summer, to 4%, then added another 2% mortality for the low-flow conditions, to yield an estimate of 94% survival at John Day with spill. Bear in mind, too, that given powerhouse minimums, there may simply not be enough water in the river to spill 30% of total river flow, Hlebechuk said – it may only be 10%-15% at times. Particularly at John Day, that could cause increased predation and mortality, because it's such a wide basin that such a small volume of spill would just sit there, Peters said.

Is there any flexibility in the project minimums? Margaret Filardo asked. That's unclear at this time, Maslen replied – the project minimums were established in the 1995 BiOp. There may be some tradeoffs possible between, say, The Dalles and John Day, with higher spill and lower generation at The Dalles and less spill and more generation at John Day. I will check on that, he said; if there is an opportunity to obtain some flexibility at one project or another, allowing us to enhance the biological benefits at a given project, then we need to know about that so we can factor it into our analysis, Maslen said.

At Bonneville, said Peters, from an FPE standpoint, current powerhouse operations with a priority on B2, total project FPE is about 74%. Bypass survival has been running 96%, Peters said; with a 5-6 unit operation, total survival through B2 without spill is about 93%, down from almost 95% last year. Looking at adding a 24-hour spill of 50 Kcfs at Bonneville, Peters said, about 67% of the fish would go through the spillway. Survival calculations become a bit problematic at this point, he said; powerhouse survival would drop to about 87% because we would drop to 1-2 units operating. Less flow through the basin means increased powerhouse mortality. Spillway survival is expected to be about 93%, so the bottom line is that, according to the Corps' estimate, survival at Bonneville would be a wash with and without spill. The only real question is whether outfall/bypass survival is really as high as I'm currently assuming, Peters said – I don't have any evidence to back up my assumption there.

Is it fair to say that there isn't necessarily a biological benefit to implementing 12-hour spill of 30% at John Day, based on your analysis? Cindy Henriksen asked. That's my interpretation, but others may have a different view, Peters replied. It would also be a wash at Bonneville, and a 2-3% increase in survival through spill at The Dalles? Henriksen asked. Correct, Peters replied. There is considerable uncertainty associated with Rock's analysis, however, Wagner said. That's correct, said Peters.

Wagner noted that Jim Ruff is doing some Sympass model runs in preparation for this afternoon's IT conference call; the concern is that the in-river conditions this year are so far outside of the normal range that customary modeling tools may or may not be valid, Wagner said. That is the concern, said Maslen; there is a lot of uncertainty about what spillway survival will actually be under such low-flow conditions. I hope NMFS is taking that into account in its modeling work, he said. It's true that we're well outside the norm this year, said Wagner; however, NMFS would argue that there is biological benefit to spreading the risk and providing multiple passage routes.

Henriksen added that there is some breaker changeout maintenance scheduled at Bonneville Powerhouse 1, starting July 30 and running through August and September; it will be necessary to run PH1 for at least some hours during the week, she said. Would that change your Bonneville survival estimates? Henriksen asked. Definitely, Peters replied – if we're talking about splitting flow between powerhouses, I would need to re-run the analysis. Based on 1992 study results, I would anticipate lower survival if Bonneville 1 is operated, Peters said. Maslen said that if this maintenance work results in lower fish survival, the timing would be unfortunate, to say the least. The group discussed the possibility of deferring the breaker work at B1; Boyd replied that his understanding is that the funds have been allocated this fiscal year, so the Corps feels that work needs to go forward as scheduled.

Mallette said Oregon would recommend delaying the onset of the breaker work until after any spill program is completed; that would likely allow the B1 breaker work to begin in mid-August. David Wills said the Fish and Wildlife Service agrees; Margaret Filardo said the Fish Passage Center would recommend no operation of Powerhouse 1 until September 1. Henriksen replied that her understanding is that the funds have to be expended by September 30, but said she will check to see if some delay may be possible.

Are there any other alternatives to the spill program that has been proposed in SOR 2001 C-6 – every-other-day spill, for example, or lower spill volumes at some project? Henriksen asked. In my opinion, we need more information about the extent or volume of the spill that may be available before we can talk about that in a meaningful way, Mallette replied. For the sake of argument, let's assume that we will have less than the 600 MW-months requested in the SOR to work with, Henriksen said – is there an alternative spill program that might still provide some biological benefit?

The group discussed the sustainability of summer spill, given the likelihood of hotter weather later in the summer, rising power prices and potential resource outages. It's hard to say what limitations may be placed on a potential spill program, said Wagner; the federal principals, however, do say summer spill is a priority, with the first preference being The Dalles, the second being John Day and the third being Bonneville.

Does the TMT still feel the priority should be The Dalles, then Bonneville, then John Day, given the limited amount of water that will be available for spill this year, and the fact that we know WNP-2 is going down later this month? Maslen asked. The fact of the matter is, we

cannot give you a spill volume or duration at this point, but it would be useful if TMT could do some “what-if” thinking about where and how spill should occur if a lesser volume is all that is available this summer. For example, if Rock’s analysis is correct and survival with and without spill is a wash at John Day and Bonneville under these flow conditions, but there is a survival benefit associated with spilling at The Dalles, perhaps that’s where the greatest spill program emphasis should be this summer, said Maslen.

We have identified The Dalles as the highest priority for spill, Mallette replied; I agree with NMFS that it is more prudent, from a biological perspective, to spread the risk and provide multiple routes of passage at John Day and Bonneville, even if overall survival is a wash, according to the available analyses. There will be benefit, she said; I’m just not sure if we can quantify it precisely. I don’t agree, said Maslen; we would be spreading the low volume of water available across a wider stretch of river, rather than concentrating it at the powerhouse. I’m not sure, in other words, that it is valid to say that spill will provide a biological benefit under these flow conditions, he said.

Bob Heinith disagreed, saying that the available evidence shows that, under very low-flow conditions, concentrating all of the flow through the powerhouse also concentrates predators in both the forebay and tailrace at Bonneville, increasing predation loss. There is no question, from CRITFC’s perspective, that there is a biological benefit to providing spill and spreading out the available flow and passage routes, Heinith said. It’s a very complex analysis, he said, but I don’t think there is any question that spill would provide a biological benefit. The problem is that there is a potential for spill, under these low flow conditions, to set up a back-roll condition in the tailrace, Maslen said – that’s why I say it is not at all clear that spill will provide a biological benefit this summer.

There seems to be agreement that there would be a biological benefit to spill at The Dalles, Forester said; however, there doesn’t appear to be agreement on any other aspect of this issue, particularly on the benefits associated with spill at John Day and Bonneville. I’m not sure that’s true, said Wagner; the Corps has presented information which questions the benefits of spill, which BPA has embraced wholeheartedly; I don’t think the other participants have changed their views about the benefits of spill, Wagner said.

I wouldn’t say BPA embraces this analysis wholeheartedly, Maslen replied; I would say rather that we would like to see some documentation of the benefits of spill, given our concern that the extremely poor flow conditions here may invalidate assumptions about the benefits of spill that would normally be a given. BPA is concerned about the potential that we could actually harm fish through spill this year, despite our best intentions, he said. Henriksen added that the Corps is in no way attempting to question the biological value of spill; again, however, the extreme low-flow conditions this year mean the normal assumptions about the value of spill may or may not be valid in the summer of 2001.

The group devoted a few minutes of discussion to the current status of the migration, in terms of the percentage of the fall chinook run that has passed John Day and The Dalles. Heinith noted that, during the last low-flow year, the 50% passage point for the fall chinook migration

occurred July 18 at John Day.

Malette observed that more information is needed about the absolute powerhouse minimum requirements for all three dams, particularly Bonneville; I would also suggest that we do everything we can to delay the scheduled maintenance work at Bonneville, she said. I would suggest further that, as a starting point, that we adhere to the spill volumes laid out in SOR 2001 C-6 until we get a determination from the action agencies about what is financially possible, she added.

If it is not possible to delay the maintenance work at PH1, and we have, say, 300 MW-months of spill to work with, would the TMT recommend sticking with the spill volumes in the SOR at all three dams for a shorter duration, or would the preference be to concentrate the available spill at The Dalles? Henriksen asked. We would need to take a look at whether spill would be more advantageous at Bonneville if the maintenance work goes forward, or less, Wagner replied – at this point, we just don't know. NMFS' preference would be to spill at all three projects, he said.

Heinith said CRITFC feels it is important to spill at all three projects, as soon as possible, because that will provide biological benefit to the broadest spectrum of the migration. We need to know what BPA can provide, in terms of MW-months of spill, he said; once we have that information, perhaps we can sharpen our pencils as far as the specific spill operations at each of the projects.

Is that the consensus of the rest of the salmon managers? Henriksen asked. I would give you an equivocal yes, replied Wills; we're concerned about the fall chinook that are entering the system between The Dalles and Bonneville, for example, from the Deschutes. It all depends how much spill we have to work with, he said.

It sounds, then, as though the salmon managers are still recommending that spill be implemented as requested in the CRITFC SOR, Forester said.

What about the question of attempting to spill 50 Kcfs at Bonneville if total river flow is only 70 Kcfs? Wagner asked. Wouldn't that put the project below its minimum powerhouse flow of 30 Kcfs? It would, Maslen replied; to me, that's the big issue here. My thought is that you would spill when you could at Bonneville, said Wagner, presumably during the day when flows were higher, or after you've been able to use the reservoir flexibility to store enough water in the forebay to allow a nighttime spill of 50 Kcfs. NMFS' recommendation would be to spill in blocks of 12 hours, as possible; our further recommendation is that, if you can't spill at least 50 Kcfs, then you shouldn't spill at Bonneville, Wagner said. In response to a question from Scott Boyd, Peters said that 18 Kcfs-20 Kcfs is probably the minimum spill at The Dalles to ensure reasonable egress conditions.

To me, that's the real issue, said Maslen – we really are at the flow threshold below which we simply can't meet both the minimum spill volumes needed to provide a biological benefit and the minimum powerhouse flows at each of the projects. He added that BPA is

anticipating having to purchase power in order to maintain minimum project discharges while storing water to meet the 28,000 MW-month system reliability storage target by October 1.

If the available spill volume is such that distributing spill to all three projects would mean spilling less than the minimum recommended volumes, would the salmon managers still want spill at all three projects? Maslen asked. For example, if we have 75 Kcfs in the river, and the minimum powerhouse flow at Bonneville is 30 Kcfs, such that we could only spill 45 Kcfs at Bonneville, would the salmon managers still want to spill at that project? NMFS' recommendation is that it may be possible to use the flexibility in Bonneville pool to store enough water to provide a 12-hour block of spill at 50 Kcfs, probably during the evening hours, Filardo replied. That would be more beneficial than providing 45 Kcfs 24 hours a day? Henriksen asked. CRITFC would prefer to see 45 Kcfs around the clock, Heinith replied; 12-hour spill blocks could result in stranding problems. Is that something NMFS would consider? Henriksen asked. NMFS would be willing to consider that, Wagner replied.

Again, the most problematic project, information-wise, is John Day, said Peters; we simply don't know what the minimum spill volume is at that project – we just have no data. The concern is that such a small spill volume simply wouldn't clear the basin, so the fish will be sitting ducks for predators. He added that, during the spring, at least, survival at John Day was significantly worse at 30% than it was at 50%-60%. Again, he said, my analysis shows a 1% decrease in overall project survival if we introduce 30% spill at John Day under these low-flow conditions, he said.

So if we see day-average flows of 75 Kcfs at John Day, 30% of that would be about 22 Kcfs of spill, Henriksen said; it is possible, however, that we could see daytime flows closer to 100 Kcfs and nighttime flows closer to the minimum powerhouse flow of 50 Kcfs. What would the salmon managers recommend under that scenario, given the fact that there would then be zero spill at night? Henriksen asked. Heinith and Wagner recommended that, under those circumstances, daytime spill only would be more beneficial than zero spill; the request for John Day, again, is for 30% spill 12 hours per day, not 24 hours. As long as you spill a minimum of 30% of total river flow, daytime spill would be acceptable, Wagner said. Is the same true of The Dalles? Henriksen asked. If there is any project where spill should not stop and start, it is probably The Dalles, Wagner replied. Actually, the tribes would recommend Bonneville as the first priority where 24-hour spill must be maintained, then The Dalles, Heinith said.

The bottom line is that, given the flows we are most likely to see later this summer and the powerhouse minimums at all three projects, we are likely to be below 50 Kcfs spill at Bonneville, and below 25 Kcfs at The Dalles and John Day, said Maslen – is that all right with the salmon managers? It's all right with CRITFC, Heinith replied. Wagner said NMFS would need to know how far below 50 Kcfs spill at Bonneville would be before making such a determination – if you're talking about 47 or 48 Kcfs, that would probably be acceptable; if you're talking 35 Kcfs-40 Kcfs, I'm not sure that would, he said.

The group also discussed the possibility of any flexibility in terms of shaping the available water more into the July period; it was agreed to discuss this further in this afternoon's

IT meeting.

To summarize, then, it sounds as though there is a preference for spill at all three projects, Henriksen said; it sounds as though at John Day and Bonneville, there is some flexibility in terms of turning spill on and off if needed, while at The Dalles, the salmon managers recommend that spill continue 24 hours a day. With that, the meeting was adjourned. Meeting notes prepared by Jeff Kuechle, BPA contractor.

LIST OF TMT MEETING PARTICIPANTS

JULY 20, 2001

Name	Affiliation
Margaret Filardo	FPC
Richard Forester	Facilitation Team
Cindy Henriksen	COE
Cathy Hlebechuk	COE
Therese Lamb	BPA
Christine Mallette	ODFW
Kyle Martin	CRITFC
Bill Maslen	BPA
Kevin Nordt	PGE
Tony Norris	Reclamation
Mike O'Bryant	Columbia Basin Bulletin
Rock Peters	COE
Paul Wagner	NMFS
David Wills	USFWS