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MEMORANDUM

TO: Bob Heinith, CRITFC
Michele DeHart
FROM: Michele DeHart
DATE: June 16, 2005
RE: Review of Court Ordered Spill Implementation Plan

In response to your request the FPC staff reviewed the U.S. Army Corps of Engineers Spill Implementation Plan. We offer the following comments for your consideration. Overall, the COE has successfully developed a plan that combines the court ordered summer spill program with the previously planned summer migration studies.

The summer spill program planned for 2005 is presenting a unique opportunity to explore questions regarding summer spill passage, summer RSW passage and survival of fall chinook migrants, which have not been previously possible. The court ordered spill program is a unique opportunity to collect fall chinook migration data in spill conditions which to date have not occurred and have been one of the primary information gaps in consideration of long-term mitigation options for fall chinook. The COE plan is consistent with planned Smolt Monitoring Program, and we will take actions to increase tagging on fall chinook migrants at traps and monitoring for gas bubble trauma to support the implementation of the order and the COE plan.

Water Quality

FPC staff attended the meetings of the Water Quality Team and Technical Management Team meetings in which the summer plan and court ordered spill were discussed. The Spill Implementation Plan distributed by the COE on June 16, 2005 is consistent with, and reflects, the regional discussions with respect to the definition of "station service" and the desire to meet water quality criteria. A note should be made regarding the third sentence in the first paragraph of the Summer Monitoring and Adjustment strategy section. The COE suggests that spill may be stopped at Lower Monumental for several hours, or several days if TDG is

exceeded, to allow the river to equilibrate. We are hopeful that discussions of potential alternative operations will be possible with the COE in the event that elevated gas levels occur.

The definition of “station service” was interpreted to mean the minimum generation required at a project to assure system reliability as defined by BPA (2000 Biological Opinion). In general this means the operation of one unit at the low end of the 1% efficiency range (approximately 11.5 Kcfs at LGR, LGO, LMN and 9.5 Kcfs at IHR) at the Snake projects and 50 Kcfs at McNary Dam. At the Water Quality Team discussion of the total dissolved gas was clarified in the context of the plaintiff’s declarations, which specified that gas would not exceed the water quality waivers. Additionally, the Water Quality Agencies expressed their desire that Clean Water Act standards not be exceeded.

Given the Water Quality Team outcome, the discussion at the Technical Management Team centered on a spill program implementation that stayed within the guidance of water quality and incorporated the unit operation requirements. The COE stated that they would plan on spilling all water above the 11.5 at Lower Granite and Little Goose dams, since they believed this implementation would not exceed the gas cap. However, the COE expressed concern that the model (SYSTDG) was not predicting TDG levels below 120% at Lower Monumental Dam so they recommended an approach of initiating spill at 10 –15 Kcfs and increasing levels up to the gas cap. Spill at IHR would continue as in past years. In addition, spill will be modified as necessary to accommodate the RSW testing at LGR and IHR.

Spill Volume

In addition the FPC staff reviewed projected flows for the summer period. Although the COE plan implementation reduces the spill volume when compared to the direct court ordered spill the difference per day is small, with the largest daily difference occurring on high flow days. On most days of RSW testing at Lower Granite Dam, flows are predicted to be below 30 kcfs when the proposed RSW flow of 18 kcfs will be close to the court ordered spill operation.

Daily STP (6-14-05 STP run) flows at Lower Granite dam were utilized to quantify the difference in spill expected at Lower Granite if spill were conducted in accordance with the COE “RSW” Operation versus spilling all outflow above 11.5 Kcfs from June 20th through August 31st. For this analysis, Table 1 of the COE Summer Spill Implementation Plan was used to determine the level of RSW spill associated with each daily STP flow (spill varies depending on discharge). Also, spill above the powerhouse flow of 11.5 Kcfs was calculated by subtracting 11.5 Kcfs from each daily STP predicted discharge at Lower Granite Dam. From this analysis, it is estimated that 231 Kaf less spill would occur under the RSW Plan relative to spilling everything above 11.5 Kcfs from 6-20 to 8-31. Each day between 6-20-05 and August 31st would receive more spills if spill were everything above 11.5 Kcfs, this amount varied daily between 0.4 and 6.9 Kcfs over the specified time period. The largest deviations from the RSW Plan and spills of everything above 11.5 Kcfs occurred at higher daily flows (i.e., above 34 Kcfs).

Research

We agree with the research outlined in the implementation plan the COE has submitted. We agree with inclusion of a spill to gas cap treatment in their tests at Lower Granite and Ice

Harbor for comparison to RSW treatments. We realize that with the low flows projected for late June, the gas cap spill and RSW spill treatments will be very close in terms of volume spilled. This could have implications on how the results are interpreted, since typical summer flows would be higher than the gas cap being tested during this low flow year. We anticipate that discussions among the parties will address these questions.

In addition the document needs to clarify the language for the operations that will occur after the study is completed. We interpret the COE plan as proposed, as intending to spill according to the court order at the completion of the study, utilizing bulk spill up to the gas cap, above the one unit operation.

At McNary the parties could consider not splitting the radio-telemetry (RT) study into two operational periods to increase the precision of results, or add additional radio tags. As an alternative the COE could delay the start of the RT study until July 1. The two operations, a non-spill operation prior to July 1, combined with a spill operation thereafter would likely lead to increased variability in the data. If the COE would like to gather non-spill operation data, they could increase sample sizes to make up for those tags used during the non-spill operation. Again, we anticipate that the parties will discuss study details and analysis as implementation progresses.

The U.S. Army Corps of Engineers operational plan for implementing court ordered spill this summer should not negatively impact the ongoing NOAA subyearling fall Chinook transportation study. This is because of the type of design NOAA implemented this year. It is patterned after the approach currently being used by the Nez Perce Tribe in estimating SARs with PIT-tagged fish for the run-at-large wild Chinook populations in two tributary sub-basins. In this approach, the tagged population is split into two segments with one segment planned to represent the untagged run-at-large fish and the other segment planned to provide in-river survival estimates. When PIT-tagged fish in the segment mimicking the untagged run-at-large are collected at Lower Granite, Little Goose, Lower Monumental, or McNary dams, they are transported. If not collected at any transportation site, the PIT-tagged fish in this group will simply pass undetected through the four collector dams in the same proportion as the untagged run-at-large fish. The overall SAR from release site as smolts to Lower Granite Dam as adults based on these PIT-tagged fish will directly reflect the overall SAR of the untagged run-at-large fish. The PIT-tagged group released to provide the in-river reach survival estimates will also provide the subset of fish known to pass through bypasses at collector dams. These fish would be used in the NOAA secondary evaluations that compare the SARs of fish transported versus bypassed at Lower Granite Dam. Given that a RSW spill study was already planned for this facility, the level of spill ordered for this site should not cause much of a reduction in collected PIT-tagged fish there from what NOAA originally planned.