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MEMORANDUM

TO: Rick Kruger, ODFW
Michele DeHart

FROM: Michele DeHart

DATE: February 24, 2012

RE: Draft 2012 Fish Operation Plan

At your request we have reviewed the Draft of the 2012 Fish Operations Plan (FOP). The 2012 FOP is being characterized as a roll-over of the 2011 Fish Operations Plan. While it is true that the 2012 FOP is basically a roll-over of 2011 operations, it does not mean that the provisions included in the FOP represent the best interest of fish protection or consistent with the adaptive management elements of the 2008 FCRPS Biological Opinion or the 2010 FCRPS Supplemental Biological Opinion. T

The roll-over process is not responsive to adaptive management objectives described in the introduction of the FOP. There are several items that are maintained in the FOP that continue to be included since they are considered to be a roll-over of past years' implementation. Given what is presently known about spill passage and the link to adult survival, the 2012 FOP should reflect adaptive management changes considered to improve fish survival. We have provided comments and identified issues that have been previously raised regarding past FOPs and presented new data that would justify the recommendations. Our recommendations for inclusion in the 2012 FOP include using the adaptive management objectives of the FOP for improvements in fish survival, rather than rolling-over present operations. Our specific recommendations for changes to the 2012 FOP include:

- Spill to the gas cap twenty-four hours per day at Little Goose Dam. The 30% cap on spill at Little Goose Dam limits spill and is not supported by new information.
- Immediately adopt the spill pattern at Lower Monumental Dam recommended by the Fish Passage Advisory Committee in the 2012 Fish Passage Plan change form, 12LMN007.

The use of the “bulk spill” pattern is not supported by data, and at Lower Monumental Dam the bulk pattern limits spill and decreases fish protection.

- At Ice Harbor Dam implement the 45 Kcfs/gas cap spill included in the Biological Opinion. The implementation of “test-like” conditions at Ice Harbor Dam only limits spill and is not defensible based on research data.
- At Bonneville Dam increase nighttime spill to gas cap levels during the spring season. Increase daytime spill to 85 Kcfs for the entire summer period.
- Manage spill at Bonneville Dam to the 120% tailrace condition. The use of the 115% TDG standard at Camas/Washougal only limits spill, and is not required to meet water quality standards.

Our specific comments are as follows:

Since 2006, the operations outlined in the Fish Operations Plan (FOP) have been largely a “roll-over” from previous FOPs. However, recent versions of the FOP have also stated that the operations are consistent with the adaptive management provisions in the 2010 NOAA Fisheries FCRPS Supplemental Biological Opinion (2010 Supplemental BiOP). This provides the basis for potential changes in operations between years, based on new information from research and analyses of the best available science. Below we describe changes that have been made to the FOP in recent years that set the precedence for changes to the FOP, followed by the justification for the proposed changes summarized above.

Precedence for proposed changes:

Over the years, there have been several instances of changes to the FOP, presumably due to the adaptive management clause in the 2010 Supplemental BiOP. However, these changes seem to frequently limit operations for fish, as opposed to making improvements to fish operations. Below are several examples of changes in the language of the FOP over the years that in some instances have limited protection for fish.

Spill at Lower Monumental Dam (LMN)

The 2012 FOP states that spring spill at LMN will be to the gas cap under a “bulk” spill pattern (page 13). This section goes on to say that the “bulk” pattern is being used because study results from previous years have revealed that dam survival under the “bulk” pattern was higher than under the “uniform” pattern. The “bulk” spill pattern often results in lower spill volumes when LMN operations are to the gas cap, which potentially increases the proportion of fish passing via the LMN powerhouse and being transported from LMN. What the FOP fails to specify is that the differences in dam survival between the two conditions were not significant but that the “uniform” pattern showed improvements in passage conditions (e.g., increased SPE, decreased delays, etc.).

Navigation Safety

In the Navigation Safety section (page 7) the 2012 FOP discusses the necessity to operate the Lower Granite (LGR) pool to up to MOP+2 ft for safe navigation. This is because of an issue that first came up in 2011 involving insufficient depths in the navigation channel in the LGR pool. An SOR was issued in 2011 to allow for MOP+1.5 or higher at certain flows. No modifications were made to the navigation channel in the fall of 2011 or winter of 2012 to improve these navigation issues. Instead, the COE has decided to “roll-over” this operation, presumably without consideration of other alternatives that may have less impact to fish. For example, barge operators could be asked to light-load when flow levels are low enough to cause concerns to navigation safety. Increases in pool elevations in the LGR pool may impact fish by delaying their migration.

Boulder Removal and Excessive Debris at Bonneville Dam:

The 2012 FOP has an operation consideration (page 18) that may cause a delay in spill at BON if boulder removal in the stilling basin is not completed by April 10th. Although the current work schedule is to have this work completed by April 1st, this operational consideration at least creates the potential for delayed start of spill at BON, which may impact fish.

A second operational consideration at BON involved the removal of the submersible traveling screens (STSs) and vertical barrier screens (VBSs) at the second powerhouse during periods of high flow and excessive debris loads (page 19). While this is a new operational consideration in the 2012 FOP, it is not a new issue. The issue of excessive debris during periods of high flow at BON has occurred at least twice in recent history (2008 and 2011). However, instead of addressing this issue by arranging for extra personnel to clean screens more frequently, the COE has opted to pull the screens when/if these issue occur. Pulling the screens at BON could impact fish by increasing the proportion of active migrants that pass through the turbines.

Adjustments to Spill Schedules at John Day (JDA) and Ice Harbor (IHR):

Spill at JDA and IHR in 2012 is to fluctuate between two different levels. The two spill levels at JDA are 30%/30% and 40%/40%, which are necessary for performance standards testing planned for 2012. At IHR the two spill levels are 30%/30% and 45 Kcfs/Gas Cap. However, these spill operations are not for any specific research studies and have been carried over for several years due to research that was completed in 2007. For both of these projects, the 2012 FOP states that spill operation treatments may be rearranged within a week, to accommodate periods of higher power demand. If this occurs, the total number of each spill treatments for the season will not change. The FOP states that this flexibility to rearrange treatment schedules may alleviate the need to declare power emergencies. This language was first inserted in the 2010 FOP and has been carried forward since. Although the number of each spill treatments for the season will not change, the allowed flexibility only benefits the power interests.

Justification for proposed changes:

In a January 19, 2011 memo (<http://www.fpc.org/documents/memos/08-11.pdf>) the Fish Passage Center summarized the current information regarding the effects of passage through juvenile powerhouse bypass systems at mainstem dams on the Snake and Columbia Rivers. The FPC concluded that the information from several independent analyses indicates that passage through powerhouse bypass systems results in significant delayed mortality of juvenile salmon and steelhead that reduces adult returns. (FPC memorandums; October 6, 2010 <http://www.fpc.org/documents/memos/135-10.pdf>, February 3, 2010 <http://www.fpc.org/documents/memos/13-10.pdf>, May 21, 2009 <http://www.fpc.org/documents/memos/71-09.pdf>).

In addition to increasing levels of delayed mortality, passage through powerhouse bypass systems has also been shown to increase juvenile migration delay. Based on these recent analyses, minimizing juvenile passage through powerhouses would reduce migration delay, reduce delayed mortality and improve adult return rates. Applying these results to project operations, increasing spill levels to dissolved gas limits would minimize juvenile passage through powerhouses and improve adult returns.

Spill to the gas cap twenty-four hours per day at Little Goose Dam. The 30% cap on spill at Little Goose Dam limits spill and is not supported by new information.

Prior to 2005, planned spring spill at Little Goose Dam was limited to nighttime hours and summer spill was not provided. In 2005, the summer spill commenced under a court order. Coincident with the initiation of summer spill in 2005 it was observed that the adult counts declined at Little Goose Dam. The situation was immediately addressed by changing spill patterns and by reducing daytime spill percentages. When the adult passage did not improve, efforts were undertaken to reduce the spill volume relative to the amount of water passing through the powerhouse in order to draw more adults to the fishway entrances. Spill was initially reduced to 50% of total river flow during daytime hours, and then when adult passage numbers did not increase, spill was further reduced to 30% of river flow during daytime hours on June 30. Adult fish counts at Little Goose Dam responded to the change in flow volume and passage increased. Subsequent to this occurrence, and with no research justification, the 30% of instantaneous flow was continued as a restriction on daytime spill at Little Goose Dam, and further, was extended to limit nighttime spill. The 30% spill level restriction often limits spill at LGS to below gas cap levels.

The FPC staff has addressed the issue of the 30% spill at Little Goose Dam in three separate memos (July 7, 2005 <http://www.fpc.org/documents/memos/112-05.pdf> , November 6, 2009 <http://www.fpc.org/documents/memos/173-09.pdf> and December 9, 2011 <http://www.fpc.org/documents/memos/177-11.pdf>). In the most recent memo the 2011 conditions, where spill at Little Goose Dam ranged from 30% to 97% of daily average flow, were assessed. It was concluded that there was no effect on travel time or fish conversion rates at LGS spill levels of greater than 30% of instantaneous flow.

Immediately adopt the spill pattern at Lower Monumental Dam recommended by the Fish Passage Advisory Committee in the 2012 Fish Passage Plan change form,

12LMN007. The use of the “bulk spill” pattern is not supported by data and at Lower Monumental Dam, the bulk pattern limits spill and decreases fish protection.

As stated above, the differences in dam survival between the two conditions were not significant, but the “uniform” pattern showed improvements in passage conditions (e.g., increased SPE, decreased delays, etc.). Given what is known about the relation between powerhouse passage and survival to adulthood, all efforts should be made to decrease powerhouse passage when available.

At Ice Harbor Dam implement the 45 Kcfs/gas cap spill included in the Biological Opinion. The implementation of “test-like” conditions at Ice Harbor Dam only limits spill and is not defensible based on research data.

Spring and summer spill at IHR alternate between 30%/30% and 45 Kcfs/Gas Cap, with the RSW in operation. Salmon managers agreed to these spill operations through 2007 for testing purposes. The conditions continued in subsequent years because the Action Agencies claimed that the FOP was rolled-over annually and could not be altered. However, it is not appropriate to repeat the test conditions when they have not been shown to benefit fish passage. In tests conducted in 2006, 2007 and 2008, the 45Kcfs/gas cap spill consistently showed higher spillway passage efficiency than the 30%/30% (FPC Memo January 15, 2010 <http://www.fpc.org/documents/memos/05-10.pdf>).

Increase spring nighttime spill to gas cap levels. Increase daytime spill to 85 Kcfs during the entire summer period.

In general, the spring spill agreed to in 2007 of 100 Kcfs daytime spill was based on concerns for adult passage, however, the 100 Kcfs nighttime spill does not have a biological basis. There is no reason to limit the spill to less than gas cap spill during nighttime hours and gas cap spill should be determined based on tailrace readings only, as both Oregon and Washington have removed the Camas/Washougal TDG gauge from their most recent total dissolved gas waivers (see below).

Summer spill at BON is scheduled to be 85 Kcfs/Gas Cap vs. 95 Kcfs/95 Kcfs (June 20-~July 20) and 75 Kcfs/Gas Cap (~Jul 21 – August 31). This represents a compromise that was reached in 2007 because the Action Agencies would not agree to increase spill throughout the season, even though 83-85 Kcfs was recommended by the FPOM. It remains unclear why spill is reduced to 75 Kcfs from July 21 through August if 85 Kcfs is preferred for fish passage and was recommended by the FPOM.

Manage spill at Bonneville Dam to the 120% tailrace condition. The use of the 115% Camas/Washougal data only limits spill and is not required to meet water quality standards.

There has been considerable concern expressed by the state, tribal and federal fishery agencies over the past several years regarding the use of the Camas/Washougal TDG monitoring station to represent the next downstream forebay below Bonneville Dam. In response to the expressed concerns the State of Oregon issued a 2008-2009 waiver for TDG management for fish passage that did not include the Camas/Washougal station as a point of compliance. Both Oregon and Washington waivers do NOT include Camas /Washougal as a site of compliance. Consequently, operating spill under the FOP 2012

saturation limits (i.e., with the 115% CAMWAS as a point of compliance) will limit spill at Bonneville Dam. It does not make sense to operate to a point of compliance that does not exist.