



# FISH PASSAGE CENTER

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## MEMORANDUM

TO: Agnes Lut, ODEQ  
Andrew Kolosseus, WDOE

*Michele DeHart*

FROM: Michele DeHart

DATE: June 2, 2008

RE: Review of "Report on the SYSTDG Modeling for AMT: With and Without 115% TDG Standard (May 8, 2008)" presented to AMY on May 13, 2008.

We have reviewed the U.S. Army Corps of Engineers' (COE) "Report on the SYSTDG Modeling for AMT: With and Without 115% TDG Standard" that was presented to the AMT at the meeting on May 13, 2008. Herein, we provide comments on this report.

### **General Comments:**

It is worth noting that the approach employed in this report is very different from other modeling efforts presented to the AMT thus far. Therefore the result of increases in spill volumes should not be compared to those from earlier modeling efforts. This report estimates spill volume changes under hypothetical operations (i.e., 2008 BiOp) for a high, medium, and low water year. Previous modeling efforts by the COE and FPC estimated changes in spill volumes for particular years under the existing operations for those years.

Overall the report is extremely difficult to follow. It seems that many of the values presented in tables (specifically Table 17 and 23) may be misplaced, as the text and the tables do not always match. There are several references throughout the text to results from Ice Harbor Dam that seem to be confusing Ice Harbor Dam with Lower Monumental Dam. In addition, there are several references to the Ice Harbor forebay monitor affecting the spill caps at Little Goose Dam. This should not be the case. Furthermore, several tables seem to be mislabeled, again confusing Ice Harbor with Lower Monumental (Tables 17, 30, and 31). These errors are

found throughout the report and make it extremely difficult to follow the report and interpret its results and conclusions.

Below are more detailed comments on particular portions of the report.

**Modeling Assumptions:**

The dates for the No Spill/Max Transport Operation at Snake River transportation sites (May 15-June 5) reflect what was published in the 2008 Draft BiOp. For the final BiOp, these dates were changed to May 7 to May 21. Therefore, the spill volumes presented in this report may not accurately represent 2008 BiOp operations under these water years and should be interpreted with caution.

The dates for the termination of summer spill at the Snake River projects were based on subyearling Chinook criteria that were presented in the 2008 Draft BiOp. Under the 2008 Draft BiOp, summer spill was to be terminated at Snake River projects when fewer than 1000 subyearling Chinook were collected for three consecutive days. However, under the Final 2008 BiOp, this criteria is 300 subyearlings, which will likely prolong the termination of summer spill. Therefore, the spill volumes presented in this report may not accurately represent 2008 BiOp operations under these water years and should be interpreted with caution.

It is unclear why the two modeled scenarios (115%/120% vs. 120% only) were assumed to have the same number of exceedences. It was argued that this was done in order to allow for comparison between spill volumes. However, managing to the 120% may not result in the same number of exceedences as the 115%/120%, particularly since the 115% criterion is historically what is exceeded first. Therefore, forcing the 120% only scenario to have an equal number of exceedences will affect the total spill volume making any comparisons unrealistic.

**Developing Default Spill Caps:**

It should be noted that the TDG levels resulting from spill at Lower Monumental in 2007 was likely affected by the bulk spill pattern simulating the RSW operation, which was implemented in 2007. The bulk spill pattern resulted in much higher TDG levels, particularly at the Ice Harbor forebay, than the uniform pattern. This is important to keep in mind because default spill caps for Lower Monumental for all years were generated based on 2007 data.

**When Spill Caps Control Spill:**

Throughout this section the COE refers to Ice Harbor and Bonneville as the two projects where spill volumes were most influenced by spill caps. However, the COE seems to be confusing Ice Harbor Dam with Lower Monumental Dam, as it is Lower Monumental Dam that is operating to the spill cap in the spring and resulted in the one of the highest increase in spill volume when the 115% criteria was eliminated (Tables 11-13). Also, Table 17 is mislabeled and should be changed to Lower Monumental Dam.

The third paragraph of this section discusses how the forebay gauges control spill 100% of the time at John Day and 58% and 72% of the time at Little Goose in a high and medium flow year, respectively. However, the data in Table 23 do not match this statement. According to Table 23, it is the tailrace monitor that limits spill at John Day and Little Goose dams at these frequencies. Given this, either the language in this paragraph is incorrect, or the data presented in Table 23 is incorrect. The COE should review these tables and make corrections where warranted.

#### **When Spill Operations Control Spill:**

With exception to Lower Monumental Dam in spring and Bonneville Dam in summer, the voluntary spill operations specified in the 2008 BiOp are typically well below the spill caps. Therefore, it is no surprise that spill operations tended to control spill more than any other factor considered by the COE in their analysis.

In the first paragraph the COE refers to Ice Harbor the one project where spill volumes were least influenced by spill operations. However, it seems that the COE is again confusing Ice Harbor Dam with Lower Monumental Dam, as it is Lower Monumental Dam that is operating to the spill cap in the spring and, therefore, would not be influenced by spill operations. As stated before, Table 17 is mislabeled and should be changed to Lower Monumental Dam.

#### **When and Where Forebay Gauges Control Spill:**

In the first bullet, the COE states that the Ice Harbor forebay controls spill at Little Goose. Spill at Little Goose should only be controlled by the Little Goose tailwater and the Lower Monumental forebay, not the Ice Harbor forebay. The Ice Harbor Forebay is typically what controls spill at Lower Monumental, which did show a substantial increase in spill volumes when the 115% criterion is eliminated (1,283-1,425 KAF, Tables 11-13). This mistake appears later in the fourth bullet as well.

The third bullet states that the Ice Harbor forebay gauge exerts considerable control on spill at Ice Harbor. It seems that the COE is again confusing Ice Harbor with Lower Monumental Dam. The Ice Harbor forebay typically controls spill at Lower Monumental Dam, not Ice Harbor Dam.

The sixth bullet states that the Bonneville forebay gauge exerts minimal control on spill at The Dalles. However, according to Table 23, this is not the case. In fact the Bonneville forebay controls spill at The Dalles 100% of the time (Table 23).

#### **High 12 Hours Average TDG Levels:**

##### ***Overall Comment son TDG Levels***

- The point that the COE makes in bullet #6 is irrelevant. This would not constitute an increase in the number of exceedences, as the 115% would no longer be a point of compliance. The purpose of the AMT is to determine whether there is substantial support for removing the 115% TDG criterion in the forebay. Indicating how many more times this criterion would be exceeded if it were eliminated is beside the point.