***Cfm Review Summary: The data presented in the PNNL report show that the ROG gate condition was overall more beneficial, by 0.8% in the tests conducted at Lower Monumental Dam for spring migrants. This change, even though small, would, based on the test results, have a negative impact on spring migrant survival at Lower Monumental Dam. The authors conclude that based on computed dam survivals with the operating gates in the stored position would be small and note that they would not always be positive, even though with the change survivals would be expected to still meet BiOp dam survival targets.***

***WDFW does not agree with the extension of study results and assumptions to Ice Harbor and or the other Snake R projects without acknowledging a potential negative impact to the survival of spring migrants. Nor do we agree with the COE’s White paper for the same reason.***

***For clarity:***

Black text: excerpts from PNNL final report 29106 ‘Effect of Operating Gate Position on Juvenile Salmon Fish Guidance Efficiency at Lower Monumental Dam’.

***Blue text: Cfm\_WDFW comments and concerns***

Underlines and highlights Cfm emphasis

PNNL Summary

For the spring study period, main-effects analysis of variance (ANOVA) on FGE found unit location, but not gate position, to be a significant factor explaining variation in FGE. While the difference was not statistically significant, ***estimated FGE for the raised operating gate (ROG) treatment was slightly higher (82.6% vs. 81.8%) than for the stored operating gate (SOG) treatment***.

*By combining the estimated differences in FGE* with survival rates and passage proportions estimated during previous telemetry studies of passage and survival at Lower Monumental Dam, the ***potential change in dam-wide survival was estimated for hypothetical stored-gate scenarios****.* The differences in FGE found during the current study were used to adjust passage proportions from earlier telemetry studies in which operating gates were in the raised position. *Dam-wide survivals for yearling Chinook salmon, steelhead, and subyearling Chinook salmon differed* *by less than one-tenth of a percent between raised and stored operating gate scenarios*. ***This finding suggests that raised gates have little effect on dam survival for downstream juvenile migrants at Lower Monumental Dam.***

***Cfm Note: This sentence directly contradicts the sentence in the previous paragraph that states: “While the difference was not statistically significant, estimated FGE for the raised operating gate (ROG) treatment was slightly higher (82.6% vs. 81.8%) than for the stored operating gate (SOG) tret.”***

***For spring migrants, although not ‘statistically significant’, more (.8 %) juvenile spring migrants would pass through the turbines at Lower Monumental Dam and their survival would be less than those guided away from the turbines.***

***3.0 Results***

3.1.2 Species Composition and Run Timing

***In the Results, Section 3.1.2 Species Composition and Run Timing, Figure 3.2 illustrates the changes in collection counts. It’s clearly shows that the % collection counts change daily but the report does not show the hourly or daily count data during the study period which would provide a clearer picture of the daily, weekly change in numbers of fish and pending target size, coupled with SMP daily collection and species composition data, estimates of numbers of yearling chinook and steelhead presence and passage. Hourly count data would enable the fish managers to better understand the study findings and recommendations.***

3.4.4 Comparison of Gate Position Treatments for the Spring Experimental Period

***The authors concluding sentence: “***While the ROG position was associated with an FGE almost 1 % higher than that for the SOG position, this difference was overshadowed by the variability within treatments.”

***Figure 3.2 clearly shows that both the point estimate and error bounds are higher with the gates in ROG than in the SOG position.***

4.0 Discussion

***Here the authors state the during the spring study period,*** “estimates of FGE during the ROG treatment less than 1% higher than the SOG treatment condition” ***and that*** “the turbine unit location explained a significant amount of the variation”.

***The data presented show that the ROG gate condition was overall more beneficial, by 0.8% in the tests conducted at Lower Monumental Dam for spring migrants. This change, even though small, would, based on the test results, have a negative impact on spring migrant survival at Lower Monumental Dam. The authors conclude that based on computed dam survivals with the operating gates in the stored position would be small and note that they would not always be positive, even though with the change survivals would be expected to still meet BiOp dam survival targets.***

***WDFW does not agree with the extension of study results and assumptions to Ice Harbor and or the other Snake R projects without acknowledging a potential negative impact to the survival of spring migrants. Nor do we agree with the COE’s White paper for the same reason.***