

Summary of FFDRWG discussion of MCN Modernization Studies and SOR #2004-11

Walla Walla District Fish Facility Design Review Workgroup (FFDRWG) was held on May 19th and 20th in Walla Walla. At the request of the Technical Management Team (TMT), discussions of System Operation Request #2004-11 were conducted. This SOR was presented at the May 18 TMT meeting by the Salmon Managers.

The SOR was summarized by David Wills (USFWS). Based on the analysis in the SOR, the concerns of the salmon managers were:

1. Facility mortality rates for yearling Chinook and steelhead in 2004 were significantly higher than the 1999-2003 average. (SOR figure 1)
2. Facility descaling in 2004 was the highest it has been in several years. (SOR figure 2)
3. Fish mortality, as measured at the juvenile fish facility, is increased when units are at maximum discharge. Mortality rates appear to increase with the number of units operated at maximum discharge. (SOR figure 3).

Discussion followed regarding data used in this analysis. Data used included all fish sampled at McNary fish facility. This includes the normal 24 hour samples as well as samples collected for research, which are 3-hour, 100% samples. The validity of using the 3-hour sampling was questioned since those samples are collected using a different methodology and consistently has higher descaling and mortality rates than the 24 hr samples. It was suggested that only the 24-hour sample be used for this analysis since the 3-hour sample might have some inherent bias in estimates due to sampling methodology.

During the meeting, salmon managers conducted the descaling and mortality analysis using only the 24-hour sampling with the following results.

Number of units operated at Maximum discharge	Number of samples	Percent descaling	Percent mortality
0	12	4.6	0.3
1	3	3.9	0.1
2	2	7.5	0.3
4	4	7.0	0.4
4*	3	5.0	0.4

*estimate removes sampling of 4/29 which had a known high trashrack debris load for the test units.

This updated analysis showed less increase in mortality and descaling than the original analysis, however the salmon managers still requested the termination of the planned studies that include operations of any units at maximum discharge. Corps of Engineers

led a discussion of these results and suggested that the levels of descaling are similar to past years and are not of great concern. However, the Corps did explain that due to initial testing, only 1-2 units were being considered for further testing, and based on the above analysis, risks to the run at large were low. The study proposal included testing up to 4 units above 1% to evaluate 3 new vertical barrier screens developed for higher turbine discharge. Initial tests led to a decision to lower load on 2 of the test units.

FFDRWG discussions then centered on resolution of descaling mechanisms at McNary. Testing of the gatewells using PIT tagged fish does not indicate a descaling problem related to higher turbine loadings. It was pointed out by NMFS that the designed PIT tag tests may not account for all possible areas of concerns. While this test was designed to look at conditions in the gatewells, it may be that the mechanism of descaling is upstream of the gatewells. Descaling could be occurring on the trash racks, extended screens (ESBS), or in the throat area of the gatewell. The Corps are inspecting VBS (and cleaning if required) and have racked trash from the trashracks in all units. Debris load on the trashracks was minimal. Corps is pursuing methods of video inspection of the ESBS.

To assist in resolving these issues, a modified test was proposed using an existing fish trap in unit 6B. Unit 6 will be run for 48hrs within 1%, fish will be sampled (3 samples) using the orifice trap at 3 varied times during operation. Unit 6 will then be dipped to remove fish from the gatewell, and increased up to maximum discharge for 48 hrs. Fish will be sampled 3 times during this operation.

Descaling estimates will be compared for these operations to assist in making informed decisions on further testing for McNary modernization. Estimates of descaling at MCN vary daily and therefore establishing a criteria for decision making is difficult. Descaling estimates at McNary this season have ranged from 1.2 to 9.0% on days when all units are operated within the 1% limit. This is an 8.8% range in daily estimates. The Corps proposes using a 5% difference between treatments (unit 6 descaling tests) to make a recommendation regarding testing in 2004. If the difference between the treatments are less than 5%, Corps will recommend continuation of the McNary Modernization studies to a limited degree (testing in 1 or 2 units). This information is critical in estimation of effects of turbine operation on fish guidance. A future step may include moving one test vertical barrier screen to unit 6 for testing under high loads using the orifice trap to collect fish for sampling. Discussion of need and possibility of moving the VBS are underway.

When this initial testing in unit 6 is completed (Thursday pm) a conference call will be conducted with the salmon managers, Corps of Engineers, and BPA. Based on that discussion, The Corps will make a decision on testing for the remainder of 2004. A follow up meeting of the FFDRWG McNary Modernization subgroup will occur in early June to lay out a plan for future studies at McNary.