**OFFICIAL COORDINATION REQUEST FOR**

**NON-ROUTINE OPERATIONS AND MAINTENANCE**

**COORDINATION TITLE -** 16 MCN 016 Wasco PUD Commissioning Testing **REVISED**

**COORDINATION DATE – January 11, 2017**

**PROJECT - McNary Dam, North Shore Fish Ladder**

**RESPONSE DATE – January 12, 2017**

**Description of the problem**

Restarting the PUD turbine at McNary requires a commissioning process that will require manual operation of the AWS system to minimize fluctuations at the ladder entrance. Here is a short recap of our attempts to accomplish this:

1. Original Commissioning Date: November 7 – 16, 2016.

 Reassembly of unit incomplete, commissioning canceled for this week.

1. Revised Commissioning Date: November 12 – 23, 2016.

Assembled unit failed initial water up tests, commissioning canceled.

The McNary north ladder was scheduled for an extended outage beginning in December and going through January. Commissioning postponed until February.

1. Current plan is to commence commissioning work February 6 – 17, 2017.

The testing consists of running the unit at different flow, rpm, and load levels to test performance of new equipment. At the beginning and end of each test, turbine discharge to the fish ladder will vary; the Auxiliary Water System (AWS) will be manually adjusted to bring the ladder into criteria. In general, for the shorter duration tests, manual mode will be used, for the longer running tests, the system will stay in auto mode. This approach should reduce excessive operation of the weir controls, differentials at the entrances will be monitored and AWS water adjusted as needed. Between tests, the AWS will provide full flow to the ladder. Bobby Johnson has confirmed that Project and PUD personnel will be on hand during these dates to make adjustments to the AWS as needed (see Comment below).

PUD staff will coordinate directly with control room operators to make these switches. See the descriptions below and the following table for details.



**Type of outage required**

No outage, but reductions in North ladder auxiliary flow as outlined above are expected.

**Impact on facility operation**

This work will result in variable auxiliary flows to the fish ladder for short periods of time at the beginning and end of each test. For most of the tests, the entrance weirs will be switched to manual which will result in small changes to the entrance differentials and attraction flows. This will be corrected by adjustments in the AWS contribution.

**Dates of impacts/repairs**

Testing is scheduled to begin on February 6 and go through the 17th, starting as late as possible each day but still allowing ample time to conduct all testing scheduled for that day.

**Length of time for repairs**

Testing is scheduled to take about 12 days if everything works. If problems are encountered, repairs will delay testing. Actual testing may not require the entire day but data collection and analysis will be a large part of this work and we anticipate needing 8 to 10 hours of each test day.

**Additionally, the contractor involved in the testing informed us they will need a day or two to install some data collection equipment, extending the commissioning process duration.**

**Expected impacts on fish passage**

Fish passage at this time of year consists exclusively of steelhead and the numbers are quite low. The data available is presented below and suggests that the number of fish impacted by short term fluctuations at the ladder entrance will be minimal. I did submit a request for more data but did not hear back before submitting this.



**Comments from agencies**

***Comment 1.*** *Erick VanDyke, Oregon;*

Unsure how to interpret this request. It does not contain a rationale for changing the dates and still is justified with the original time line. Could these pieces of information be added to the MOC?

*Response, Rick Martinson, PSMFC;* The reassembly is taking longer than expected, for a variety of reasons I'm sure. I am not familiar with the details but perhaps Bob could elaborate if you're interested. That is the rationale and the justification is still and maybe perhaps more valid as there is likely to be fewer fish around the longer the commissioning is delayed. I did not prepare this REVISED MOC but if you want, I could take a look at fish numbers for the 14th thru the 23rd.

***Comment 2.*** *Gary Fredricks, NOAA;*

The "Dates of impacts/repairs" section is apparently incorrect since it still states that this begins on the 7th.

Also, it appears the expected impacts to fish passage table was not updated for the new test dates. Not big issues but these MOC's should be accurate and updating the table should indicate a lower impact. Aside from these nit picky things, my main concern is making sure that the project is on board with having an operator stand by to observe and adjust the AWS system as needed when it is in manual (and auto as well).

*Response, C. Peery, USACE NWW;* Dates of testing and table estimating fish numbers impacted were updated.

*Response, Bobby Johnson, USACE NWW McNary Dam;* The PUD unit is either on or in bypass to supply AWS.

During the short testing, the PUD staff will be adjusting the auxiliary water system valves manually as needed so they can maintain entrance pool differential. During the short test, our operators will adjust the entrance weirs as needed when in manual. They can do this from the control room. The idea of having the entrance weirs in manual during the short test to is to avoid excessive searching by the entrance weirs if they were in automatic. There will likely be swings in pool differential but the hope is to keep them small.

During the long tests, our operators will let the entrance weirs adjust automatically, which is the same thing that happens when the PUD unit shuts down and switches automatically to bypass during an emergency or before winter shutdown. There are a few minutes the pool differential can possibly drift out of criterion during the switch.

**Final results**

Please email or call with questions or concerns.

Thank you