

**MEMORANDUM FOR THE RECORD-20MCN15****SUBJECT: Fish pump 2 outage**

**Narrative:** A key potable water issue on the 8<sup>th</sup> floor of the powerhouse required repair to avoid a major water line failure. This repair was scheduled for October 21 from 1300 to 1500 hours. Due to the design of the potable water system, the juvenile fish facility and the Oregon ladder fish pumps' cooling system would lose potable water during the repairs. Oregon ladder fish pump 2 is the focus of this memorandum.

Due to the age and condition of the water pump systems taking them in and out of service is not recommended. It was decided to switch fish pumps 2 and 3 from potable water to raw cooling water at 0800 hours on October 21. Almost immediately, the strainer in the raw water line became obstructed and fish pump 2 tripped offline at 0828 hours. To meet FPP requirements with two fish pumps out of service (fish pump 1 is currently out of service for overhaul), NFEW3 was closed at 0853 hours.

Two issues were found at fish pump 2 likely related to the obstruction in the raw water line which led to the pump tripping offline. The bearing cooling water line was found ruptured and the oil head pump limit switch was damaged. The bearing cooling water line rupture was repaired on October 21. An attempt was made to repair the limit switch damage, but this repair was not as successful. It was decided to remove the limit switch from fish pump 1 which is being overhauled and use it on pump 2. The electrical work was completed on October 22. Fish pump 2 returned to service and NFEW3 reopened at 1238 on October 22.

A ladder inspection on October 21 at 1140 hours showed NFEW3 closed, as required. The only out of criteria during the pump 2 outage was the south pool differential was 0.7 feet. An examination of the Oregon ladder on October 22 at about 0800 hours revealed similar conditions.

The juvenile facility had no issues during the potable water outage.

**Location:** Oregon ladder fish pump house. Fish pump 2.

**Method:** Repair damage to fish pump 2's systems, mechanical (cooling water supply line) and electrical (limit switch).

**Timeline - Duration:** The Oregon ladder was operated on one fish pump per FPP from October 21 at 0828 hours to October 22 at 1238 hours.

**A. Species:** There were no known fish losses. Adult fall Chinook, coho and summer steelhead are the primary species using the ladder currently. The only out of ladder criteria during the single fish pump operation was the south Oregon ladder entrance pool was slightly below criteria.

**B. Origin:** NA

**C. Length:** NA

**D. Marks and Tags:** NA

**E. Marks and Injuries Found on the Carcasses:** NA

**F. Future and Preventative Measures:** The problems described above may not have been preventable. Sometime issues arise outside our control. However, project personnel will examine the lessons learned and develop a preventative plan.

**G. Photos Taken:** None.

**Bobby Johnson**  
**Project Fisheries Biologist**  
**McNary Lock and Dam**