

CENWW-ODO

Date: 2018-08-28

MEMORANDUM FOR THE RECORD 18 LMN 10 MFR Emergency Fish Pump Outage

SUBJECT: Emergency Outage of Fish Pump #2.

Narrative: An emergency outage for repair of Fish Pump #2 occurred 0840-1340 hrs on 22 August (MFR 18 LGS 09). At 1448, an hour after restarting the pump, the thrust bearing and guide bearings overheated and the fish pump protection system shut the unit down to prevent catastrophic damage. Operations and Maintenance staff made numerous attempts throughout the remainder of the workday to successfully restart the fish pump but their efforts were unsuccessful. At about 1600, the decision was made to reconfigure the Adult Fish System to the same configuration used earlier in the day during the repairs. The recently completed repair was re-inspected on 23 August with no evidence that bearing damage had occurred. Further inspection revealed that the heat exchanger which cools the oil was fouled and a replacement heat exchanger was installed in conjunction with replacing the lubricating oil. The system was briefly restarted 23 August but the thrust bearing quickly overheated again. The oil was again drained and the thrust and guide bearings were removed again for inspection. The lower portion of the guide bearing displayed evidence of some heat stress so the guide bearing from Fish Pump #1 was installed. Use of this bearing increased shaft clearance slightly. No additional internal damage was observed during the inspection and the pump was placed back into service at 1415 hrs on 27 August.

During this outage, the procedure listed in the Fish Passage Plan (Chapter 7, 3.3.2.3) was utilized to help minimize effects on adult attraction flows. South Powerhouse Entrance (SPE) 2 and South Shore Entrance (SSE) 2 were fully closed and SPE 1 was partially closed to maintain differentials between the channel and tailwater. This procedure was effective and kept differentials very close to the 1.0 foot criteria during the outage. An additional orifice was opened in the juvenile collection channel to provide extra water through the primary dewatering structure

Fish Pump #3 remained in operation during the outage.

Location: Lower Monumental Powerhouse

Method: The fish pump pedestal bearing was disassembled, inspected, new oil was added and a faulty heat exchanger was replaced.

Time Line - Duration: The outage lasted 5 days from 1448 hrs on 22 August to 1415 hrs on 27 August.

A. Species: There were no known fish losses. The juvenile bypass facilities were unaffected by this event. Adult salmonid passage may have been briefly affected due to less attraction water being added to the diffusers in the adult channel. However, SPE 2 and SSE 2 were fully closed and SPE 1 was partially closed to maintain differentials between the channel and tailwater. This procedure was effective and kept differentials very close to the 1.0 foot criteria during the outage. From 22 August to 27 August, hourly fish counts were compared to recent counts at Ice Harbor Dam and no negative impacts to fish passage were apparent. Biologists checked on real-time fish count numbers frequently during one pump operation to verify the numbers of fish passing the windows remained consistent with recent numbers at Lower Monumental and Ice Harbor Dams.

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: Project personnel will continue to monitor fish pumps and try to minimize outages as much as possible until a permanent fix can be applied during the winter outage period.

G. Photos Taken: None.

Sincerely,

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