

MEMORANDUM FOR THE RECORD**SUBJECT: 18 MCN 09 MFR Closure of spillbay 20 from July 18 to 19, 2018**

Narrative: On July 18, it was noted that spillbay 20 was not opening and closing properly. At 0820 hours, the spillgate was disconnected from crane 6. Due to the spill pattern at the time, the bay was already closed. It was determined the crane's gear box required repairs, which were immediately begun. After the repairs were completed and the limits set on the crane, the crane and spillgate returned to service on July 19, at 1610 hours. The spill pattern during some of the time called for the gate to be open.

Location: Spillbay 20.

Method: Spillbay 20 had to be closed so the gear box on crane 6 could be repaired. Once this had occurred, the crane and spillbay were returned to service.

Time Line - Duration: On July 18, at 0820 hours to July 19 at 1610 hours, spillbay 20 was out of service. The FPP, Table MCN-9 (Page MCN-39) and the table below of hourly average spill during this time frame would have called for a mix of bay 20 open and closed. From 74.6 to 95.8 kcfs, the bay 20 is closed. During approximately 33 hours, the bay was closed for 19 hours when it should have been open 2 stops per Table MCN-9.

A. Species: There were no known fish losses. Subyearling Chinook are the primary race/species of juvenile salmonids passing through the spillway at this time. During above time frame, bays 1 to 17 were open and bays 18 through 21 could have been open depending on river flows. Bay 20 being closed 19 of 33 hours and being one of 21 bays would have had minimal impact on subyearling Chinook passage.

Sockeye and summer Chinook salmon along with steelhead were the primary adult species passing on July 18 and 19. Having bay 20 closed for 19 out of 33 hours would have had minimal effect on adult ladder attraction with only the north Oregon powerhouse entrance. All other adult passage entrances would not have been effected.

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: Preventative maintenance and spare parts can reduce outages during the fish passage season, however, some outages are unpreventable.

G. Photos Taken: None.

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Table 1. Hourly average spill from July 18 at 0820 hours to July 19 at 1610 hours when spillbay 20 was closed. FPP Table MCN 9 spillbay 20 criteria for the actual spill amount is also shown.

| Date and Time | Hourly Average Spill (kcfs) | FPP Table MCN 9 Spillbay 20 |
|----------------------|------------------------------------|------------------------------------|
| 7/18/18 7:00 | 83.6 | Closed |
| 7/18/18 8:00 | 89.3 | Closed |
| 7/18/18 9:00 | 90.5 | Closed |
| 7/18/18 10:00 | 92.2 | Closed |
| 7/18/18 11:00 | 93.3 | Closed |
| 7/18/18 12:00 | 94.7 | Closed |
| 7/18/18 13:00 | 95.2 | Closed |
| 7/18/18 14:00 | 97 | Closed |
| 7/18/18 15:00 | 97 | Closed |
| 7/18/18 16:00 | 97.9 | Open |
| 7/18/18 17:00 | 97.9 | Open |
| 7/18/18 18:00 | 98.5 | Open |
| 7/18/18 19:00 | 98.9 | Open |
| 7/18/18 20:00 | 99.2 | Open |
| 7/18/18 21:00 | 99.9 | Open |
| 7/18/18 22:00 | 100 | Open |
| 7/18/18 23:00 | 100 | Open |
| 7/19/18 0:00 | 100.8 | Open |
| 7/19/18 1:00 | 100.9 | Open |
| 7/19/18 2:00 | 101 | Open |
| 7/19/18 3:00 | 101.2 | Open |
| 7/19/18 4:00 | 101.9 | Open |
| 7/19/18 5:00 | 102.8 | Open |
| 7/19/18 6:00 | 102.8 | Open |
| 7/19/18 7:00 | 103.9 | Open |
| 7/19/18 8:00 | 105.5 | Open |
| 7/19/18 9:00 | 106.1 | Open |
| 7/19/18 10:00 | 106.9 | Open |
| 7/19/18 11:00 | 79.3 | Closed |
| 7/19/18 12:00 | 79.7 | Closed |
| 7/19/18 13:00 | 80.8 | Closed |
| 7/19/18 14:00 | 81 | Closed |
| 7/19/18 15:00 | 81.3 | Closed |
| 7/19/18 16:00 | 81.6 | Closed |
| 7/19/18 17:00 | 81.8 | Closed |
| 7/19/18 18:00 | 82.9 | Closed |