CENWW-ODO **Date: 2020-07-28**

MEMORANDUM FOR THE RECORD 20 LMN 07 MFR Closing of Spillway Weir due to Findings of Dive Inspection on Floating Guide Wall Cables

SUBJECT: Closing of Spillway Weir due to Findings of Dive Inspection on Floating Guide Wall Cables

Narrative: According to the 2020 Fish Passage Plan, the Removable Spillway Weir (RSW) is required to be operated for juvenile fish passage until August 15 or when river flows stay below 30kcfs for three consecutive days and are trending downward. Tow Boat Operators noted a slight shift of the floating guide wall towards the spillway at the end of June. At that time, all navigators were instructed to avoid any contact with the floating guide wall. Inspection of the guide wall revealed concerns over a cable replaced in early 2017. Guide wall cables were inspected by ROV in early July but did not reveal a clear picture of what had occurred. A contract to temporarily repair the guide wall was awarded and on 28 July, divers discovered that the primary cable between the anchor block and an intermediate connection had failed. In consultation with District staff, management determined that this failure constituted a dam safety emergency due to concerns that currents from surface passage would draw the floating guide wall away from its present location and likely into the spillway. As a result, the RSW was closed at 1600 hrs on 28 July until temporary repairs can stabilize the guide wall. The permanent repairs are planned to be completed prior to next fish passage season. If repairs are completed prior to cessation of spill, the RSW will be reopened per FPP and FOP guidance.

Method: RSW was closed at 1600 on 28 July to eliminate the threat of an unsecure and potentially traveling floating guide wall being drawn to the spillway weir.

Time Line - Duration:
The RSW was closed at 1600 hours on 28 July and is anticipated to be out of service until the scheduled closure date of 15 August unless repairs can stabilize the guide wall.

A. Species: NA
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: There is a Project Delivery Team working on setting up a contract to permanently fix the cable system for the guide wall during the lock outage in March.
G. Photos Taken: None.

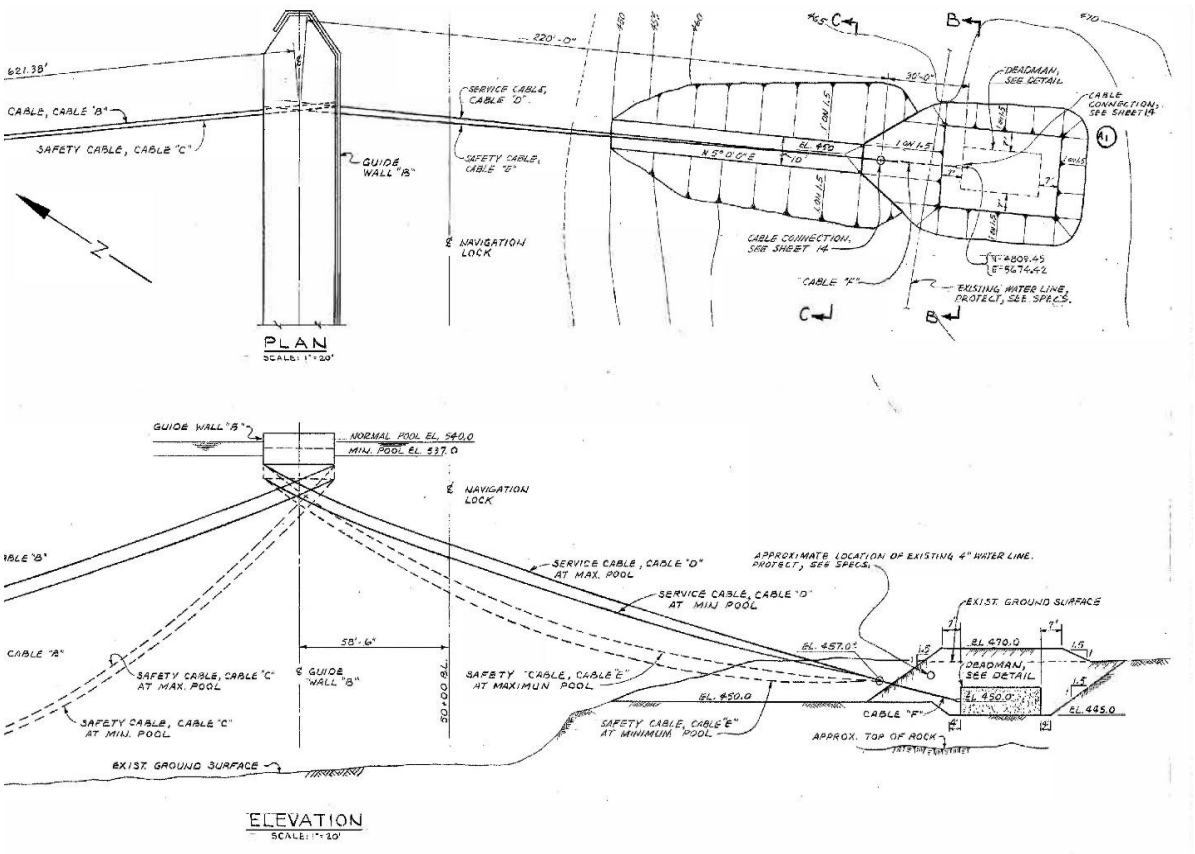
Chuck Barnes
Project Fisheries Biologist
Lower Monumental Dam

Comments from agencies

Responses to ODFW Email dated 7/30/20

1. *It would be helpful to get a better accounting of the event(s) that actually influenced the failure.*

Per the drawing below, there are three cables on the south shore maintaining the guide wall in a static location. Initial ROV inspection led designers to suspect Cable D (replaced 2017) due to excessive slack at the surface. ROV inspection of that cable was inconclusive, but Cable E a cable scheduled to be replaced in March 2021 during the annual maintenance outage was discovered to be reduced from and effective diameter of 2 ½" to ½". The cable had been previously replaced in 1986. Divers on Tuesday discovered that the actual failure mechanism was cable F which attaches to the anchor block, exits the sediment and connects to cables E & F. This inspection was performed by tracking the cable from the guide wall to the bridle. Due to recent winds, it is estimated that the tip of the guide wall has shifted to the north by 45 feet. Total guide wall failure would occur should the tip move an additional 15 feet northward.



2. *Given the relatively recent replacement date, understanding what the expectation on wear-and-tear would be helpful.*

Service Life of these cables are expected to be 30 years.

3. *Was the 2017 maintenance and repair expected to last more than 1 or 2 years?*

Yes

4. *What rope diameter is being used to secure the floating guide wall, and what is the expected minimum breaking strength?*

The service cable (D) is 2 1/8" in diameter, safety cable (E) is 2 ½" in diameter, and cable F is also 2 ½" in diameter. The project does not have the breaking strength of this size bridge strand cable.

5. *How often is the floating guide wall contacted by navigation?*

Unknown

6. *Was the floating guide wall used to correct lockage or run into in an less than usual way?*

Unknown but doubtful as there is no evidence of it having been struck by traffic.

-----Original Message-----
From: Erick VanDyke [mailto:Erick.S.VanDyke@state.or.us]
Sent: Thursday, July 30, 2020 9:22 AM
To: Hockersmith, Eric E CIV USARMY CENWW (USA) <Eric.E.Hockersmith@usace.army.mil>
Cc: 'Lorz, Tom' <lort@critfc.org>; Trevor Conder - NOAA Federal (Trevor.Conder@noaa.gov) <Trevor.Conder@noaa.gov>; Josie Thompson <josie.thompson@noaa.gov>; Jay Hesse <jayh@nezperce.org>; Jonathan Ebel <jonathan.ebel@idfg.idaho.gov>; Charles Morrill <charles.morrill@dfw.wa.gov>; david_swank@fws.gov; Claire McGrath <claire.mcgrath@noaa.gov>; Scott Bettin <swbettin@bpa.gov>
Subject: [Non-DoD Source] RE: 20LMN07 MFR-Early Closing of RSW

Morning Eric,
I Appreciate the update and need for action. It would be helpful to get a better accounting of the event(s) that actually influenced the failure. Given the relatively recent replacement date, understanding what the expectation on wear-and-tear would be helpful. Was the 2017 maintenance and repair expected to last more than 1 or 2 years? What rope diameter is being used to secure the floating guide wall, and what is the expected minimum breaking strength? How often is the floating guide wall contacted by navigation? Was the floating guide wall used to correct lockage or run into in an less than usual way? Appreciate any insight you might be able to offer.

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After Action update

In close coordination with the tugboat operating to hold the floating guide wall in position, the Lower Monumental Dam RSW was reopened at 10:35 August 4, 2020. The remaining spill gates were returned to comply with the appropriate spill table in the FPP. The towboat holding the floating guide wall in position is planned as a temporary measure until the repairs to the floating guide wall anchor cable are made.