

**OFFICIAL COORDINATION REQUEST FOR
NON-ROUTINE OPERATIONS AND MAINTENANCE**

COORDINATION TITLE- 17 LWG 21 MOC NPE Adult Entrance Gates Repair

COORDINATION DATE- 18 August 2017

PROJECT- Lower Granite Dam

RESPONSE DATE- 23 August 2017 COB

Updated 18 August 2017 with comments from NOAA

Description of the problem: ROV inspection of NPEs was performed with the AWS pumps removed from service and spill shifted to spillbays 5-8 from 1226-1431 hours 14 August. Ladder gravity flow and tailrace turbulence made it difficult to control the ROV and cables were not retrieved. The ESBS camera was used to assist in the inspection. Cables were located and it was confirmed that it is possible to replace the failed hardware and return the gates to service in less than a day. At MOP elevation (633.0-634.0 feet) NPEs are on sill at 628.0 feet. The end of MOP operation is scheduled for the first week in September which will result in the tailrace operating between 636.0-637.0 feet. Too much depth over the weirs has the potential to impact channel/tailrace head differentials at the north powerhouse and north shore. The Project proposes to repair NPEs prior to the peak of fall Chinook passage. Retrieval of the cables is being coordinated with a dive team and BPA for 1200-1700 hours August 28 to be prepared to move forward if fisheries manager support this action. To reduce impacts to adult passage during repairs the Project will install NPE bulkheads prior to the dive. NPE bulkhead installation may require removing AWS pumps from service for less than an hour. Spill will need to be shifted to spillbays 5-8 during dive operation and repairs. Spill volume of 18 kcfs will remain the same. SPEs and NSE1 will remain in service with AWS pumps operating while the repairs are made. Following repairs the bulkheads will be removed and normal ladder operation will resume. Deviations in spill and AWS pump outage times will be reported. The alternative option is to operate the remainder of the season with NPEs on sill for the remainder of the season and sacrifice channel/tailwater head differentials at the north powerhouse and north shore.

Type of outage required: Ladder AWS pumps will need to be removed from service for up to an hour during bulkhead installation and removal. Spill volume will remain around 18 kcfs with spill pattern adjusted as needed for the repairs.

Impact on facility operation: Removing the AWS pumps from service will result in ladder operation outside of the entrance head differential and depth over entrance weir criteria for up to an hour during bulkhead installation and removal. NPEs will be bulkheaded off for about five hours during repairs. FOGs along the powerhouse as well as SSEs and NSE1 will remain in service.

Impact on unit priority: N/A

Impact on forebay/tailwater operation: Tailrace conditions will likely be impacted as spill pattern changes will be required for the repairs.

Impact on spill: Spill volume will remain around 18 kcfs with the spill pattern adjusted as needed for the repair.

Dates of impacts/repairs: The project proposes to do the repairs August 28 between 1200-1700 hours.

Length of time for repairs: Repairs of NPEs are expected to take about five hours to complete.

Analysis of potential impacts to fish

1. The 10-year daily average passage August 25-31 is about 128 Chinook, 313 steelhead, and 1 adult lamprey per day (see Figure 1). Minimal impact to subyearling Chinook passage are expected.
2. N/A
3. Based on the 10 year average daily passage at Lower Granite a full day ladder outage has the potential to impact about 0.18% of annual Steelhead passage and about 0.12% of annual Chinook passage. However the project is not requesting the AWS pumps be removed from service for a full day.
4. During dive and repairs, NPEs will be bulkheaded off (closed). FOGs along the powerhouse as well as SSEs and NSE1 will remain in service. If AWS pumps removal from service is required adult ladder attraction flow will be impacted for less than an hour during bulkhead installation and removal.

Summary statement - expected impacts on:

Downstream migrants- Minimal impacts are expected for subyearling Chinook.

Upstream migrants- See comments above.

Lamprey- There is the potential for short delays in adult lamprey passage.

Comments from agencies

-----Original Message-----

From: Bill Hevlin - NOAA Federal [mailto:bill.hevlin@noaa.gov]

Sent: Friday, August 18, 2017 8:47 AM

To: Hockersmith, Eric E CIV USARMY CENWW (US)

<Eric.E.Hockersmith@usace.army.mil>

Cc: Trevor Conder <trevor.conder@noaa.gov>; Bill Hevlin

<bill.hevlin@noaa.gov>

Subject: [Non-DoD Source] Re: Official Coordination 17 LWG 21 MOC Adult Entrance Repair

Eric,

Thanks for coordinating with us on the plan for repair of the entrance gates at lower granite dam. NOAA Fisheries supports the Corps' plan for repair on August 28, 2017, this is important to get done before the bulk of the Snake River adult fall chinook upstream migration arrives at the project.

Bill Hevlin
NOAA Fisheries

-----Original Message-----

From: Tom Lorz [mailto:lorz@critfc.org]
Sent: Friday, August 18, 2017 12:56 PM
To: Hockersmith, Eric E CIV USARMY CENWW (US)
<Eric.E.Hockersmith@usace.army.mil>
Subject: [Non-DoD Source] RE: Official Coordination 17 LWG 21 MOC Adult Entrance Repair

I am fine with this sooner better then later.

Thanks

Tom

Final coordination results

The dive team successfully retrieved the cables for both NPEs and the gates were raised to a position that enables repairs to be made. While the gates are raised the depth elevation at both NPEs remains 628.0 feet (sill). Repairs are ongoing and Lower Granite mechanical crew estimated NPEs can be repaired in two-three weeks depending on parts condition and availability. From 0951-1548 hours spill was increased to 18 kcfs and spill was shifted to spillbays 5-8. AWS pumps were removed from service for bulkhead placement from 1051-1121 hours and again from 1548-1608 hours for bulkhead removal. Deviation in fish passage criteria occurred outside the coordinated time due to a misinterpretation of the MOC.

After Action update

Please email or call with questions or concerns.

Thank you,

Elizabeth Holdren
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Please email or call with questions or concerns.

Figure 1. Ten-year average (2007-2016) Lower Granite Dam adult passage (www.cbr.washington.edu/dart accessed 08/18/17).

