

## Fish Passage Plan (FPP) Change Form

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**Change Form # & Title:** 25LWG002 – AWS Pumps Return to Service  
**Date Submitted:** 26 November 2024  
**Project:** Lower Granite Dam  
**Requester Name, Agency:** Elizabeth Holdren, USACE NWW  
**Final Action:**

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**FPP SECTION:** Chapter 9 (LWG), Section- 2.4.2. Adult Facilities

**JUSTIFICATION FOR CHANGE:** LWG has three electrically operated pumps that supply auxiliary water to the adult fish ladder collection channel for attraction flow. Two pumps are operated at any one time (normally pumps 2 and 3) and the third pump is kept as a spare and rotated occasionally with one of the other two pumps to balance operational wear.

The system was not designed with the capability to operate with three pumps. The auxiliary water supply system and pumps have a tailrace operating range of 633' to 638' MSL. AWS pump 1 has fast and slow speeds and supplies the same volume as pumps 2 and 3 when operated in fast. Pump 1 trips offline when tailrace elevations are reduced and can only be operated in slow speed at MOP elevation. Pump 1 limitations have been reported for years and the inability for pumps 2 and 3 to maintain channel tailrace head differentials at MOP has been documented in LWG annual Adult and Juvenile Fish Facilities Monitoring Reports since at least 2001.

AWS pump annual maintenance occurs during the ladder outage with two pumps returned to service in February and one pump remaining out of service to complete a three-year overhaul. This has been LWG routine maintenance schedule for over 20 years. Bringing a pump back online requires a 4-hour outage to move stoplogs. This has been coordinated with FPOM annually which can result in pump 1 operating for a longer duration when pumps 2 and 3 are returned from a three-year overhaul. LWG would like to include bringing AWS pumps 2 and 3 back online as soon they are returned to service as part of routine maintenance in the FPP.

**PROPOSED CHANGE:** Add new section:

### **2.4.2. Adult Facilities – Adult Fish Passage Season (March 1 – December 31).**

**2.4.2.18. Auxiliary Water Supply (AWS).** Three electric pumps supply auxiliary water for the fish ladder and powerhouse collection system. Two pumps (normally pumps 2 and 3) can provide required flows during normal operations and most flow conditions, and the third pump is kept as a spare and rotated occasionally with one of the other two pumps to balance operational wear.

i. Operate AWS pumps 2 and 3 whenever possible during MOP operation.

ii. Return AWS pumps 2 and 3 to service when three-year overhaul maintenance has been completed with work scheduled after 1200 hours.

iii. After a three-year overhaul bring AWS pump 1 online when the MOP season has ended to balance operational wear.

**COMMENTS:**

**RECORD OF FINAL ACTION:**