

Project Title: Drainage and Unwatering Pump Replacement

Dam and Reservoir Project: Lower Monumental

Estimated Total Cost: \$3-\$7 million

Estimated Schedule for Completion of the Project: Phase 1a: None for this Project  
Phase 1: FY2015-2017  
Phase 2: FY2017-2019  
Expected Physical Completion: FY2019  
Current Status as of 6/8/2017: Phase 2 (contract bid solicitation)

### **Summary**

Lower Monumental Dam and Reservoir Project was built with two drainage and unwatering pumps. Due to increased leakage from the hydropower generating unit bays, a third pump was added in 1987. All three drainage and unwatering pumps are required to unwater a hydropower generating unit and associated water passages to allow Corps staff to safely inspect and maintain the hydropower generating turbines due to those increased leakage and to prevent powerhouse flooding and handle the abnormally high leakage to the drainage sumps. With the current configuration, the three pumps are only capable of discharging 77 percent of the inflow, resulting in unsafe conditions. The purpose of this project is to provide an efficient and reliable drainage and unwatering system capable of draining both the drainage and the unwatering sumps as required by Engineering Manual (EM) 1110-2-4205 Hydroelectric Power Plants (Chapter 11 Unwatering and Drainage Systems). Per EM 1110-2-4205, each drainage pump should be capable of collecting and discharging 150 percent of the maximum station drainage.

The drainage and unwatering pumps have experienced more frequent failures. Reliability of these systems is important to the safe operation of the project. Failure of the drainage systems could lead to flooding of the powerhouse, and failure of the unwatering systems can prevent accessing critical components for inspection and maintenance. Many manufacturers do not support the pumps' current motors and associated components, making repairs more expensive and time-consuming due to the unavailability of replacement components. Lengthy outages can leave Corps staff exposed to flooding danger. In 2013, emergency repairs were required on two drainage and unwatering pumps (2 and 3), which required offsite part manufacturing and repair during which only one of the three pumps was available. A similar outage during winter could have resulted in a condition that would have flooded the powerhouse and electrical cabinets.