McNary Drainage, Unwatering, and Equalization System Rehab

This project seeks to rehabilitate and replace the drainage, unwatering, and equalization systems at McNary Dam. This includes replacement of all components of the DUE system with new equipment except the 24-inch equalization valves, which would be re-packed; replace and rehabilitate selected pipe components, inspect remaining piping.

The drainage, unwatering, and equalization (DUE) systems at McNary Dam's powerhouse each perform individual but similar functions, they contain very similar components, and they are located primarily in the same vicinity of the powerhouse. The drainage system is responsible for continuously collecting all powerhouse leakage and drainage water into the drainage sump and pumping it into the tailrace. The unwatering system is responsible for collecting all main unit, station service unit, and adult fishway collection channel water and pumping it into the tailrace when needed for maintenance purposes. The equalization system is responsible for re-filling the main units and station service units with water after maintenance activities that require unwatering are completed.

The mechanical portion of these systems is mostly original equipment (60+ years old) and is relatively untouched. A majority of the valves are either difficult to operate and won't close completely or are completely inoperable. The piping systems are starting to generate pinhole leaks in certain areas due to corrosion, which indicates a need to replace and/or rehab the piping. The electrical portion of these systems was rehabbed in 2010, which included rewinding the unwatering pump motors, replacing the motor control centers, replacing the drainage pump DP4 and associated motor/controller, and adding soft starters. A significant portion of the powerhouse unwatering and drainage system, including the piping serving each individual unit, is in poor condition and in need of either rehabilitation or replacement. The valves are in poor condition and they are difficult or unable to be operated due to corrosion. Much of the piping system is encased in concrete, which makes it very difficult to inspect and maintain. Valve issues not only contribute to making the system unreliable but also make it unsafe to project personnel.