

Project Title: Main Unit 4-6 Surface Air Cooler Upgrades

Dam and Reservoir Project: Ice Harbor

Estimated Total Cost: \$1-\$3 million

Estimated Schedule for Completion of the Project:

Phase 1a: None for this Project

Phase 1: FY2016-2017

Phase 2: FY2018-2020

Expected Physical Completion: FY2020

Current Status as of 6/8/2017: Phase 1 (design)

### **Summary**

Replacement of the hydropower generating units' surface air coolers (coolers) at Ice Harbor Dam and Reservoir Project will reduce the risk of the coolers going out of service, which would result in the generator unit being placed out of service to avoid damage to the stator windings and related equipment. Maintenance costs continue to increase as the components age and deteriorate. The coolers on hydropower generating units 4, 5, and 6 are original plant equipment that were installed in 1975 and are operating beyond their expected service life of 35 years. They currently show signs of decay and pose a risk to reliability of the hydropower generating units.

In May 2013, eddy current testing, which is an electromagnetic test to determine flaws in conductive materials, was performed on one cooler section of unit 5. The results of the testing showed that there was extensive corrosion pitting damage on the internal diameters of most of the tubes within the cooler. If one or more tubes were to start leaking, that leak could go unnoticed until it caused major damage because the tubes are not visible except during testing. Although this testing was only performed on one cooler section, since the other coolers were all installed at the same time, and based on the Corps' engineering expertise and experience with similar equipment, they are likely in similar condition and also in need of replacement. The deteriorating condition of the coolers reduces their heat transfer efficiency, which could reduce efficiency to a point where the coolers do not sufficiently cool the generators, increasing the risk of overheating.