

Project Title: Transformer Deluge Fire Protection System 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: FY2017-Unknown

Phase 2: Unknown; Project postponed pending further transformer evaluation

Expected Physical Completion: Unknown

Current Status as of 6/8/2017:

Phase 1 (design)

Summary

The transformer deluge fire protection system at the powerhouse at Ice Harbor Dam and Reservoir Project provides protection to six main hydropower generating unit transformers and two station service transformers through a discharge of water onto the surfaces of the transformers and breakers. Transformers transfer electrical energy between electrical circuits. Breakers are an electrical circuit protection device. The transformer deluge fire protection system can be activated either by detection devices or by manual pull stations. Using water as the deluge medium, the system serves to provide fire suppression in the event of a fire.

Water spray fire protection for the exterior transformers at Ice Harbor Dam and Reservoir project is required by current Corps, National Fire Protection Association, and FM Global fire protection standards. The current system is original plant equipment that was placed into service in 1962. The Corps' Hydroelectric Design Center (HDC) performed a system evaluation in 2015 and concluded the deluge fire protection system was in poor condition and operating beyond its 40 year design life. HDC recommended that the system be upgraded and modernized.

As the deluge system is customized to the individual transformers it serves to protect, the Corps has determined that this project should be combined with upcoming transformer replacement at Ice Harbor. The optimal timing of the two projects is currently being evaluated, but will likely delay the project until the transformers require replacement.