



PROJECT PROFILE: PIPELINE REHABILITATION LOCTITE TYFO SYSTEM

A120-INCH DOMINION PIPE REHABILITATION

YORKTOWN, VIRGINIA

OVERVIEW

The LOCTITE TYFO system was used as a liner to provide corrosion protection and nominal hoop tension strength on a 120-inch diameter steel pipe at a nuclear power plant in Yorktown, Virginia.

The 120-inch diameter steel pipe at this power plant was severely rusted due to the surrounding corrosive environment. A repair solution was needed that could not only withstand the harsh environment but could also be installed with minimal shut down time at the plant.

A repair solution was designed using the LOCTITE TYFO system, a carbon reinforced polymer (FRP) material. One layer of the LOCTITE TYFO SEH Glass fiber wrap system was installed longitudinally in the pipe. This was followed by one layer of the LOCTITE TYFO SCH carbon fiber wrap in the hoop direction. The glass fiber wrap provided strength in the longitudinal direction as well as acting as a dielectric barrier between the steel and the carbon fibers. The carbon fiber wrap provided strength in the hoop direction.

Small crews, who were previously certified to work in confined spaces, installed the composite materials during regularly scheduled shut down times. A unique scaffolding system was designed to allow access to all sides of the pipe at one time. This ensured that the circumferential layer of the composite could be applied continuously around the pipe.

The FRP composite solution to this pipe deterioration provided a quick repair technique to repair the deteriorated steel. There was minimal impact on the power plant operations and the solution is expected to hold up well in this aggressive environment. After the five year inspection, the installed LOCTITE TYFO system continues to perform as designed.

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