

## Shepherd Chemical R.E.D. Buildings Chilled-Water Systems

*Norwood, OH*

**Construction Completion:** 2015

**Tri-Tech Services:** MEP Engineering  
Structural Engineering

### Project Description

Tri-Tech analyzed the existing chilled-water system serving two buildings, the D and R buildings, at Shepherd Chemical's Norwood, Ohio, production facility. The chilled-water system consists of primary and secondary production and process chilled-water loops. Tri-Tech provided analysis to determine if the system supplied sufficient capacity to add an additional process load for a third building, the E building.

Tri-Tech conducted extensive field visits, and its analysis revealed existing-system parts that needed to be replaced and parts that would remain. Tri-Tech determined that the system's existing primary pumps and tanks needed to be removed. In their place, a new pumping layout with new pumps would be installed to provide redundancy and variable frequency drives (VFDs) to improve energy efficiency.

Tri-Tech's team created a design that established the new process's piping's routing through several different buildings, exterior locations, and over a utility bridge.

Tri-Tech's structural and mechanical departments worked together to determine the required pipe-support conditions. The teams also determined how and where to modify the existing structures to support the new piping.

Tri-Tech's completed design incorporated three phases to minimize the downtime. The first phase allowed one chiller to feed both of the existing processes; the second phase involved removal of unnecessary equipment and installation of new pumps and tanks; and the final phase had remaining unnecessary equipment being removed and the final pumps installed.

Tri-Tech's mechanical, electrical, and structural engineers worked closely with the owner's plant's engineers to provide a complete design leading to an efficient, cost-effective replacement and update to Shepherd Chemical's chilled-water systems.

