

PROJECT PROFILE / LNG FACILITY STUDIES AND UPGRADES

MANAGING ONGOING MODERNIZATION TO KEEP LIQUEFYING

As Xcel Energy's Wescott LNG facility aged, it began to experience diminished performance. To continue meeting compliance requirements and customer needs, Xcel Energy is implementing an upgrade plan that will improve the efficiency of the facility.



A DISTRIBUTION UTILITY COMPANY INCREASES EFFICIENCIES AND SAFETY AT ITS PEAK-SHAVING LNG FACILITY

The development of an upgrade plan now is keeping an essential facility operating to meet compliance requirements.

PROJECT STATS

CLIENT

Xcel Energy

LOCATION

Inver Grove Heights,
Minnesota

3

BRAZED ALUMINUM HEAT EXCHANGERS

2

OPERATIONAL STUDIES

The efficient and cost-effective operation of the liquefaction process at liquefied natural gas (LNG) facilities is vital for delivering reliable service to customers. So when Xcel Energy noticed efficiency issues with its peak-shaving Wescott LNG Facility, it turned to our team for ongoing solutions.

Our work began by focusing on enhancing the plant's liquefaction process — chilling vaporized natural gas (feedstock gas from pipelines) into liquid at -260 degrees Fahrenheit and storing it for peak-season use. Having determined Wescott should be producing more LNG for the energy it was expending, we assisted in the adjustment of procedures and with the replacement of aging components in the liquefaction heat exchangers, which chill the gas. These improvements increased Wescott's liquefaction efficiency. The system is also now able to better manage the molecular makeup of today's feedstock gas.

However, after several years operating efficiently with these minor improvements, Xcel Energy realized further — and more extensive — work would be needed to keep Wescott operating efficiently into the foreseeable future.

Therefore, Burns & McDonnell was employed to conduct an operational study on the macro level to help determine if further modifications could provide long-term benefits or if completely changing out the system with a new technology would be the right approach.

While the study is ongoing, we are partnering with Xcel Energy's staff to execute additional improvements to keep the plant active, as required by regulations. This scope includes design of a successive replacement approach for three brazed aluminum heat exchangers, allowing Wescott to stay online and continue creating and storing LNG. During this phase, we are providing services for piping, instrumentation and controls, and structural design, as well as overseeing the manufacture of replacement equipment. Construction began in early 2020.

We are also project managing and providing technical oversight for Wescott's boil-off gas compressor project. This parallel scope includes automating the plant's current manual interface of on-site valves associated with its liquefier. Once the automation is complete, the control room operator will have the capability to monitor



and manage this essential valve process with complete transparency — significantly increasing efficiency and safety.

Through our comprehensive services of all aspects of the Wescott LNG Facility's upgrades — owner's engineer, owner's representative,

project manager and engineer of record — we are helping to organize and manage the expansive aspects of the project, including integrated project schedules, critical path assessments and supplier coordination. The modifications are expected to be complete in 2020, successfully delivering full operation

by the beginning of liquefaction season to save ratepayers money and remain in compliance. Meeting this deadline will also allow Xcel Energy to dedicate its resources to determining if a full system overhaul is indeed necessary to keep Wescott operational, long term.



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