ENR Midwest

Natural Gas Gate Station Moved Ahead Despite COVID-19

Grayslake Station already had a tight five-month construction schedule before the pandemic began

All new equipment was installed in Grayslake Station in a little over four months.

PHOTOS BY JEFF YODERS/ENR

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In April 2019, utility North Shore Gas received approval from local municipalities to move forward with the most ambitious upgrade ever of its Grayslake gate interconnect station. The station handles a large majority of the natural gas that heats and powers the utility's northeastern Illinois service area and connects the North Shore Gas system with that of supplier Kinder Morgan.

Four years of planning went into the $27-million project that had to be built and commissioned between late April and October 2020 before demand for natural gas rose as the weather got colder. Then the pandemic hit in March and a point-of-no-return date on whether to begin the project or put it off until stakeholders knew more about COVID-19 loomed by April 15.

"We knew we had to get this project done in August all the way back in April. We felt Aug. 10 was when it had to be ready [for commissioning]," says Kyle Frayn, manager of transmission engineering for North Shore Gas and Peoples Gas. "When the pandemic started, knowing that construction was considered essential infrastructure here, we decided to still go forward and pull the trigger."

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Not moving forward and using the aging equipment and the 1940s-built equipment at the station for at least one more year wasn't desirable. Baker Hughes and local partner Nelson Technologies had already produced pipeline distribution valves for the Grayslake pipeline interconnect station, including monitor and blending valves for the station's connection to provider Kinder Morgan's pipeline.

One of the immediate problems created by the pandemic was supply chain issues for contractor Meade.

"Our vendor had quite a bit of challenges getting smaller diameter electrical components," says Frayn. "Things that were usually readily available. So our contractor Meade's solution was ordering multiples and waiting for the one that came in first."

Meade's risk management and safety department put together a COVID mitigation plan that included temperature checks and standard questions asked to every employee every morning when they showed up on the job. One advantage was that the work was entirely outdoors so it was easier to implement social distancing measures in open air.

"Being based out of Chicago we have a lot of regular employees that work on the North Shore projects, and the local unions have all kinds of trained individuals also available," says Matt Bivins, project manager and estimator at Meade. "We felt like even as COVID did impact the project, we would be able to roll with it, and it worked out good. We really had very little to no impact from it."

During demolition of the 1940s-era station, Meade discovered asbestos material that required mitigation. Meade's crews worked three shifts seven days a week to get the job completed by the August deadline. More than 75 workers were on the job to get the project completed on time.

"There was some asbestos-containing material," Bivins says. "There was nothing really that created a huge impact. It was a few days here and there to get additional test results, to make sure that we were handling things properly, but every day counted."

Meade had worked on several projects for North Shore Gas at Grayslake station previously, and Bivins says the team had a really strong understanding of what was underground and how to bring in and install the large, prefabricated parts from Baker Hughes and other suppliers such as the pipeline sections, distribution valves and a new scent building.

The completed gate station is more reliable and resilient thanks to the modern equipment, and it has redundancy in dual gas pressure control, two process heating runs, better surveillance and remote monitoring, and better physical security measures. The new station consolidates ownership of the gate and distribution system. Before the rebuild, the gate station itself was owned by supplier Kinder Morgan. Now, North Shore Gas controls the entire system.

Because it was all new equipment built in different sections, the commissioning period was important for North Shore Gas.

"The way we're structured, we really needed this up and running by the end of October, and there was over a month of commissioning after the construction piece was done [in August]," Frayn says. "We had a nice break-in period ahead of that end of October critical date, and now we're looking forward to seeing how this thing runs all winter here."

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ENR Midwest Editor and Associate Technology Editor Jeff Yoders has been writing about design and construction