

Wisconsin Propane Terminal Closes Midstream Supply Gap for CHS, Inc., Due to Cochin Pipeline Flow Reversal

April 2017

<https://pipeline-news.com/wisconsin-propane-terminal-closes-midstream-supply-gap-for-chs-inc-due-to-cochin-pipeline-flow-reversal/>

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Photo: Superior: The CHS, Inc., propane terminal in Hixton, WI, designed, engineered and built by Superior Energy Systems in 2014, addressed a midstream supply gap due to flow reversal of the Cochin Pipeline

For decades, residents, businesses and farms in the U.S. upper Midwest in need of propane were reliably served by the Cochin Pipeline. Propane flowed east from Saskatchewan to Chicago through several U.S. states. But in early 2014, pipeline owner Kinder Morgan began sending light condensate westbound from Chicago to Saskatchewan. Thus, a reliable

regional propane source disappeared for CHS, Inc., and created a major challenge for the Fortune 100 company: How to supply its customers with propane for home heating and agriculture.

The only alternative that made sense was to build a series of rail-supplied propane terminals along the rough path of the Cochin Pipeline. That included a greenfield terminal in Hixton, WI, owned by CHS and operated by the Federation Cooperative. It was crucial to erect a terminal that maximized both safety and efficiency, which is why it worked with Superior Energy Systems to design, engineer and build that facility in the space of nine months in 2014.

Safety and efficiency

The Hixton terminal comprises a system designed to offload propane from railcars via vapor compressors into four 90,000-gallon aboveground storage containers. The stored propane is then loaded via pumps into transport trucks for delivery to bulk plants. The system is fully automated, using programmable logic controls (PLCs) for loading and unloading. The system is efficient, with the ability to offload six railcars roughly every four hours, and two truck loading bays capable of loading six trucks per hour.

The system was designed to exceed the National Fire Protection Association NFPA 58 Liquefied Petroleum Gas Code. NFPA 58 is focused on propane containment; the system is designed to prevent unintentional release of product into the atmosphere. That means the system incorporates many redundant safety features for propane transfer, including:

- Internal safety control valves incorporating mechanical, thermal and remote means of shutdown built into the storage containers.
- An emergency shutoff valve installed into the piping at the truck unloading stanchion and each railcar connection, which are pneumatically actuated and connected to the containers' internal safety controls.
- An emergency shutdown system that will close all necessary valves in order to contain the product, with operators located at strategically crucial locations.
- Gas and flame detection installed in conjunction with the PLCs that can cause a facility shutdown if an emergency condition exists.

Exceeding expectations

The terminal has become one of CHS's best. According to Ron Batey, director of propane risk and asset development, it had the highest outgoing propane volume in fiscal year 2016. "We've done more volume than we expected, and the reliability of the terminal has been high," Batey said.