



Case Study LNG #4

Power Generation at
Secluded Diamond Mine

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Highlights:

Location — Northern Quebec

Scope of Project:

- Engineering & Project Managed to support the design, manufacture, installation, startup, & commissioning for LNG storage system for plant power generation
- Project completed in early 2016
- (6) 80,000 gallon LNG storage tanks (MAWP: 101 psi / 7 bar)

Application:

Liquid Natural Gas (LNG) is used as the primary fuel source for power generation (seven 2.1MW gen sets) at a diamond mine, located in far north Quebec Canada, off the electric and natural gas pipeline grid.

Project Background:

Chart Industries was requested to provide LNG storage equipment, design and commissioning within a tight time line, in an extreme climate location.

Significant Accomplishments:

LNG Storage tanks were designed, manufactured and shipped within six months of receipt of order, delivered on time. Supply included control system design.

Installation and commissioning took place in far north of Quebec in January, in sub-zero conditions with limited light. The tank commissioning on site was accomplished in two weeks.

The tank cooldown process utilizes liquid nitrogen, which is inert and colder than LNG. Due to the remote location of the installation site, it was important to minimize the volume of liquid nitrogen used for this process. Clever commissioning engineering developed a cascade cooldown process, reducing the volume of required liquid nitrogen by 50%.

System Configuration:

The LNG system is designed to unload LNG trailers into the storage tanks, rapidly without venting natural gas. The six 80,000 gallon tanks are interconnected with 300 feet of vacuum jacketed piping and feed the regasification vaporizers. The tanks are equipped with pressure building heat exchangers to maintain required tank pressure during high flow rates (193,000 SCFH / 5,466 Nm³/H). The control system is housed in a 20 foot ISO container for ease of transporting to the site.

