



Case Study LNG #5

LNG Storage & Regasification
Conversion from Diesel to
LNG for Power Generation



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Highlights:

Location — Jamaica

Scope of Project:

- 1,764,000 gallons total onsite storage, across 7 shop-built tanks
- LNG ship offloading
- All-inclusive high capacity LNG pump and vaporization system, designed for no venting
- Trailer loading
- Future vehicle fueling system from same bulk storage
- Complete engineering, control and site safety systems

Application:

Enabling a 115MW power station in Jamaica to convert from diesel to natural gas and use imported LNG as its primary fuel source.

Project Background:

The tight project timeline and requirement for minimal site civil work eliminated the site erected LNG storage tank as an option. Seven 1,000 cubic meter (252,000 gal) shop-built storage tanks were globally sourced from multiple manufacturing sites. LNG was initially planned to be transported to the island by 40 foot ISO containers; however, to further reduce costs, it was decided to transport by LNG tanker and off-load directly into the on-site storage tanks.

Significant Accomplishments:

Chart engineers designed the entire system, including storage tanks and manifold, tank loading, vaporization, boost pumps, boil off gas compression, and the operational control system. Safety and environmental objectives were of paramount importance. The entire system is designed in accordance with NFPA guidelines. The site operates normally without venting natural gas to the atmosphere.

System Configuration:

Ship offload designed to interface with the tank farm comprised of 7 storage tanks. Thermax® (A Chart Industries Company) heat exchangers utilize sea water for high-capacity vaporization of LNG to gas. Cryogenic pumps boost pressure to 450 psig at a maximum flow rate of 6.08 kg/s. Boil off gas compression equipment captures any excess gas, sending it downstream, eliminating vent losses. The entire control system, designed by Chart, allows the system to operate automatically 24/7, through the entire demand profile with minimal operator interaction.

