

LGC NCOE Study Guide: Facility LNG Storage Tank

Regulatory

- NFPA 59A – Standard for the Production, Storage, and Handling of Liquefied Natural Gas (LNG)
- ASME Section VIII – Pressure Vessels



You can check your answers on the LGC NCOE website “Test Your FGCE Knowledge” <http://www.uscg.mil/lgcncoe>

1. *What type of tank is this?*

1. Pictured is a vacuum insulated, Type C, 340m³ LNG storage tank, built by Lockheed Martin for the Harvey Gulf International Marine LNG fueling facility in Port Fourchon. The inner pressure vessel is constructed of stainless steel with a MAWP of 70 psi and the outer vessel (not fabricated as a pressure vessel) is carbon steel. These are similar in design and construction to the smaller [290 m³] tanks being installed on the six Harvey Gulf LNG powered OSV’s being built in Gulfport, MS, except the outer tank is stainless steel in lieu of carbon steel. Since the OSV’s will need methane gas to operate, a stainless steel tank room, or “cold box,” will be welded to the end of the outer tank to convert the cold LNG into a warm gas to burn in the engines.

Facility Tank Data: 340m³ [89,760 gals]
OD of outer tank: 14 ft 06 in
Length: 102 ft
Wt: 265,000 lbs
MAWP: 70 psi

2. *What standard is the tank built to?*

ASME Section VIII, Pressure Vessel Code is the standard to which both the facility and vessel tanks are fabricated, with further review and approval of the vessel tank design by both ABS and the Coast Guard's MSC office.

3. *Will this tank ever have to be internally examined?*

For both the facility and vessel tanks, the inner and outer tanks are sealed with no manways or hatches. For the facility tank, there is no requirement for internal examination of this tank due to the non-corrosive nature of LNG. For the vessel tank, ABS has agreed to daily visual checks of the outer tank with an annual examination of the vacuum between the two tanks in lieu of any internal examination for the 25 year design life of the tank. The Coast Guard is still reviewing this concept.

4. *What is the Coast Guard's jurisdiction?*

None for the facility tank itself, only in the marine transfer area for LNG as defined in 33 CFR 127.005. For the LNG storage tanks aboard the vessels, the Coast Guard provides oversight on the design, construction, and installation of all LNG related components.



Harvey Gulf International Marine LNG fueling facility in Port Fourchon, LA