



LAKE CHARLES TERMINAL



LAKE CHARLES LNG OVERVIEW

The terminal, completed in July 1981, is the United States most modern LNG importation terminal. It is located on a 382-acre site in the Lake Charles Harbor and Terminal District, about nine miles southwest of Lake Charles, Louisiana.

Three LNG storage tanks, each 196 feet (60 m) in diameter and 163 feet (50 m) tall, and a fourth at 232 feet (71 m) in diameter and 205 feet (62 m) tall are the most prominent physical features of the facility. They were specially designed and constructed to store LNG at cryogenic temperatures for sustained periods.

The tanks have a combined capacity of approximately 2.7 million barrels (425,000 cubic meters) of LNG, or approximately 9.0 billion cubic feet (Bcf) of gas.

When operating at peak capacity, the terminal can regasify LNG and send out natural gas at a maximum rate of 2.1 Bcf per day and has a firm sustained capability of 1.8 Bcf per day or approximately 13.2 million metric tons per annum (mmtpa).

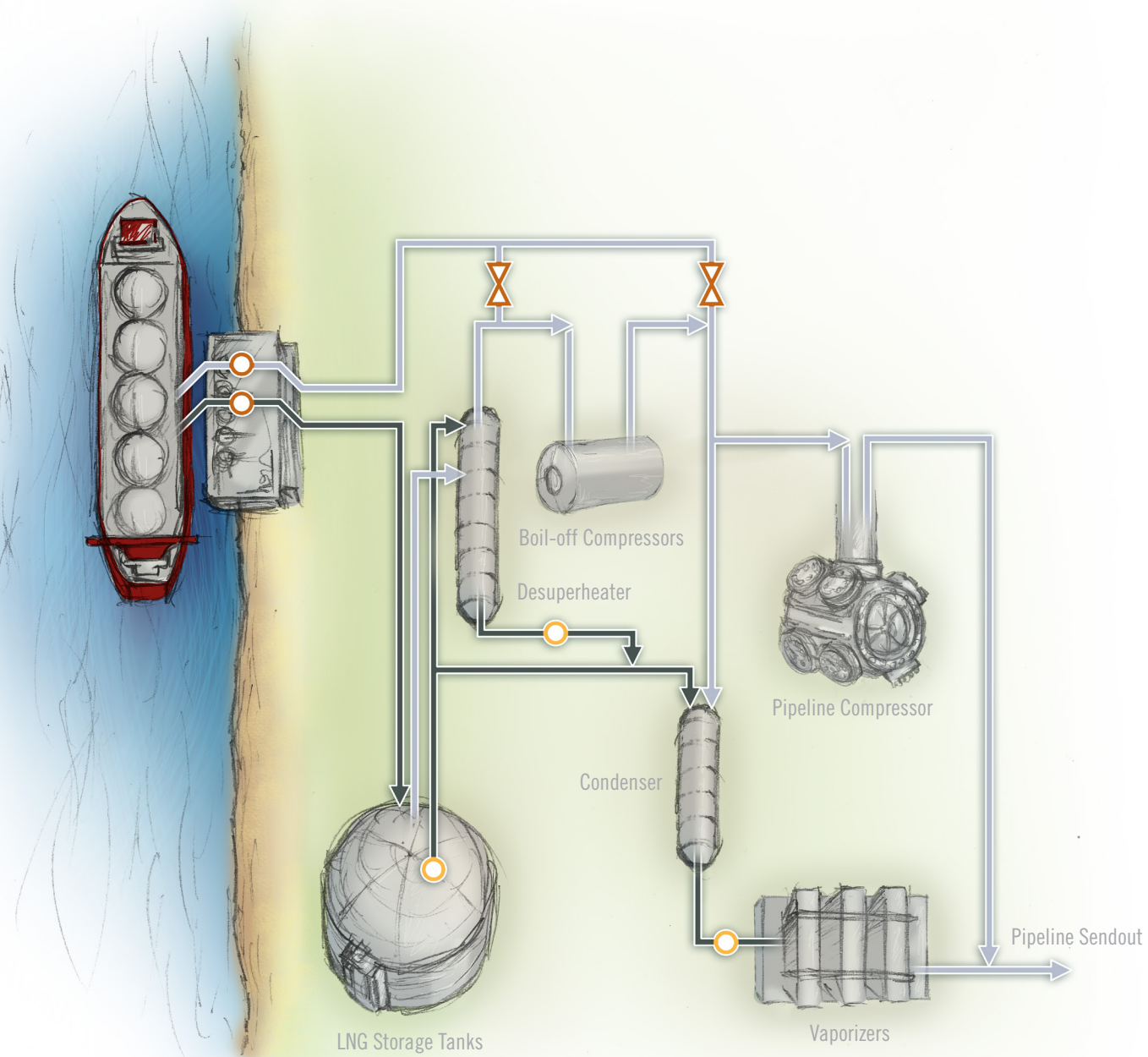
The Lake Charles terminal is designed to stringent standards:

- Tanks can withstand wind speeds up to 150 mph (67 meters per second).
- In addition, tanks are rated for earthquake Zone 1.
- Terminal elevation is above the 100-year flood plain and hurricane tidal surge.

SIMPLIFIED FLOW DIAGRAM OF THE LAKE CHARLES TERMINAL

— Gas

— Liquids



LNG STORAGE

The storage tanks are double-walled and double-bottomed with a suspended internal aluminum roof plate covered by a carbon steel dome.

The inner tanks are 9% nickel steel and of welded construction.

The outer tanks are constructed of welded carbon steel.

The three original tanks are each supported by 974 pre-stressed, 14 inch x 14 inch x 75 foot piles which were driven 72 feet below grade to support the 21 inch thick concrete pile cap on which each tank rests. The new fourth tank is supported by 1,100 pre-stressed, 14 inch x 14 inch x 72 foot piles which were driven 70 feet below grade to support the 21 inch thick concrete pile cap on which it rests.

Highly efficient insulation fills the void between the inner and outer tanks and covers the inner roof plate.

The tanks maintain LNG in a liquid state by auto-refrigeration of the boil-off. Boil-off gas can be used for plant fuel, recombined with LNG before it is vaporized or sent directly to sendout.

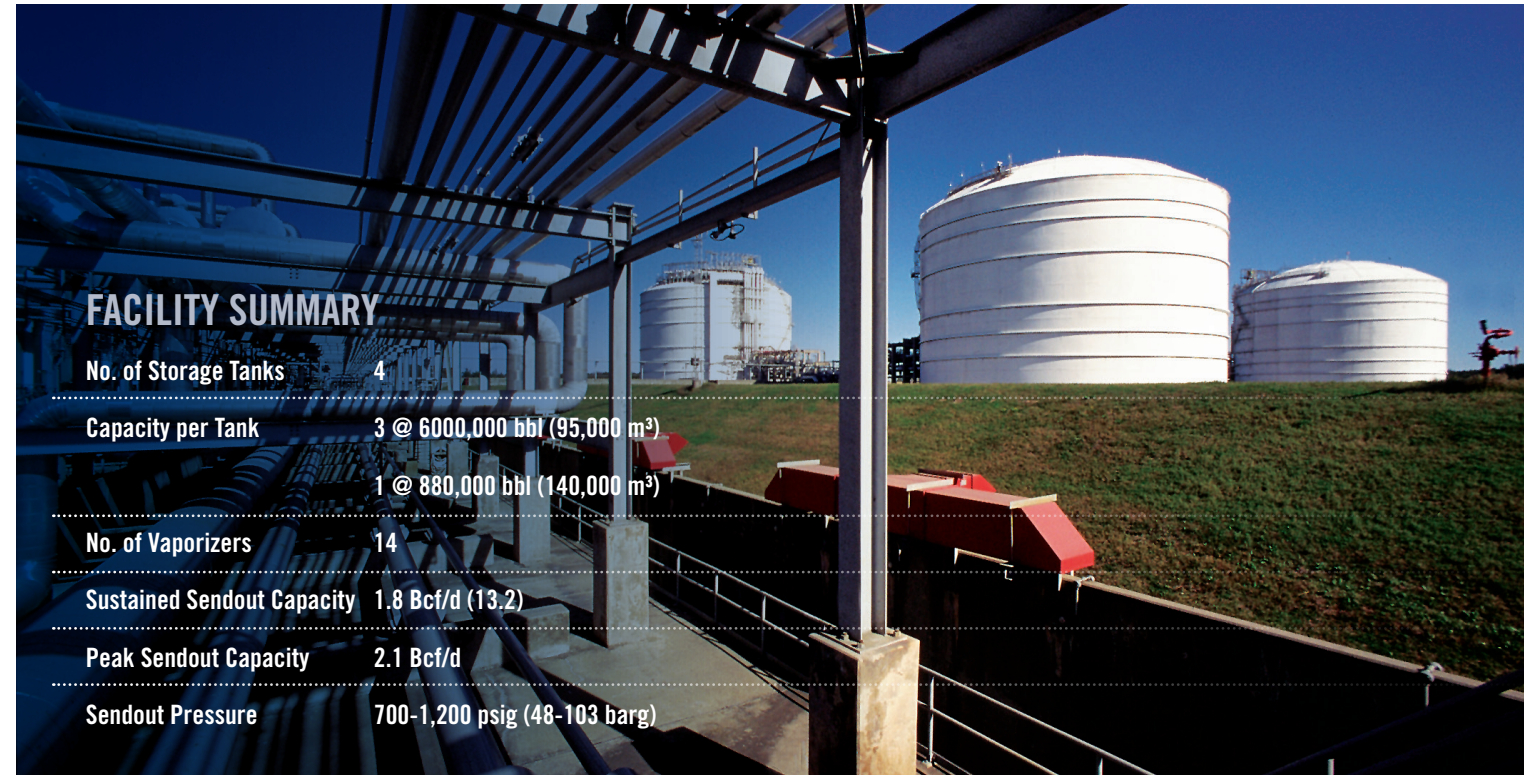
Each tank has three submerged pumps of which two are required to meet maximum LNG sendout capacity.

SENDOUT SYSTEM

Prior to vaporization, secondary pumps increase the pressure of the LNG to meet pipeline requirements.

Each of the 14 gas-fired, water-bath vaporizers can regasify LNG at a rate of 150 MMcf/d (1.14 mmtpa).

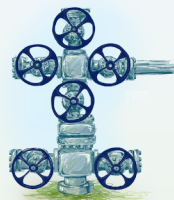
The facility is connected to the mainline transmission system of Trunkline Gas Company by dual 23 mile pipelines with a total capacity of 2.1 Bcf per day (15.3 mmtpa).



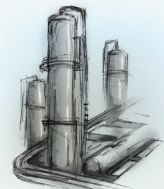
FACILITY SUMMARY

No. of Storage Tanks	4
Capacity per Tank	3 @ 6000,000 bbl (95,000 m ³) 1 @ 880,000 bbl (140,000 m ³)
No. of Vaporizers	14
Sustained Sendout Capacity	1.8 Bcf/d (13.2)
Peak Sendout Capacity	2.1 Bcf/d
Sendout Pressure	700-1,200 psig (48-103 barg)

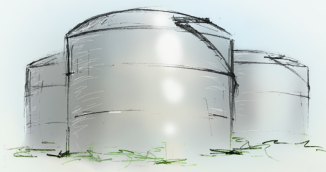
The LNG Facility is connected to the mainline transmission system of Trunkline Gas Company.



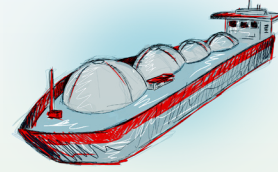
Gas Field



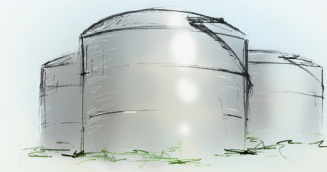
Liquefaction Plant



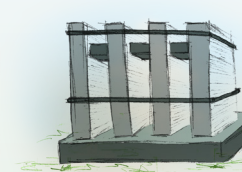
LNG Storage Tank



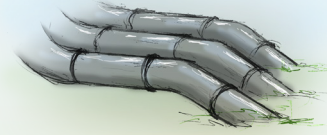
LNG Tanker



LNG Storage Tank



Vaporizers

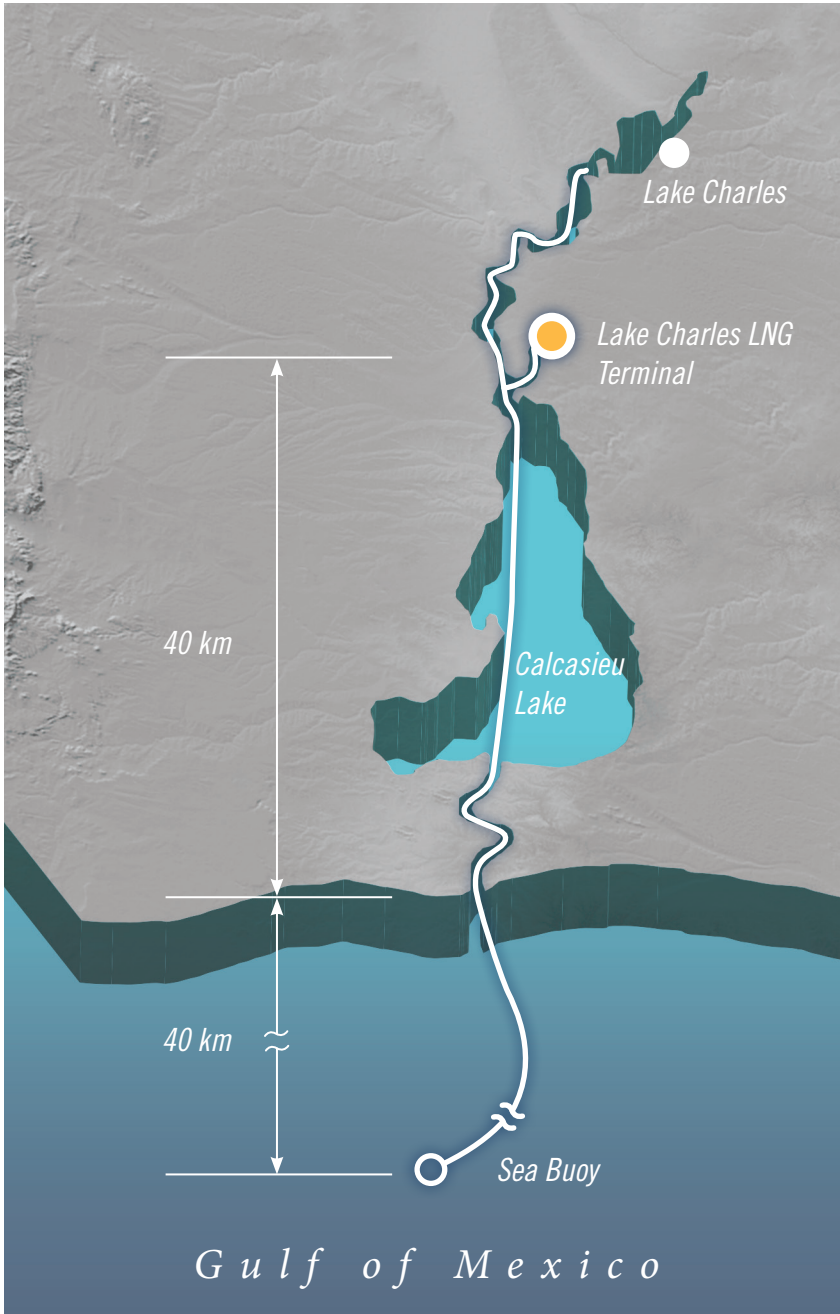


To Pipeline System

PRODUCING REGION

CONSUMING REGION

WATERWAY AND DOCKAGE



The Lake Charles terminal is connected to the Gulf of Mexico by a 48 mile (80 km) ship channel. The channel is dredged to a depth of 40 feet (12 m) and is 400 feet (120 m) wide with no overhead navigational obstructions.

The turning basin at the terminal is 1,400 feet (425 m) wide and 1,600 feet (490 m) long.

Our flexible docking facilities handle a variety of tanker designs and sizes ranging from 30,000 m³ up to 160,000 m³.

A typical vessel unloading is accomplished in 12 hours.

The terminal also has the ability to provide nitrogen.

The terminal berth is extremely well protected. There is no current in the waterway, and the terminal is seldom affected by high winds.

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