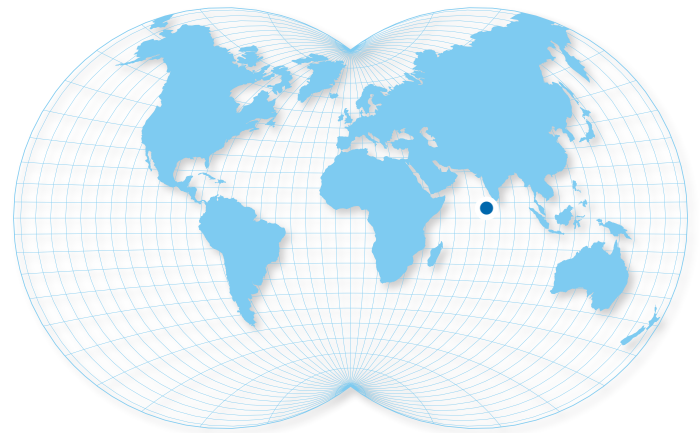


SURAT, INDIA:

# Hazira CALM



## Scope of Work

SOFEC designed and constructed a CALM terminal for LPG and NGL service. The SOFEC CALM is equipped with a 300 lb. class swivel and product piping with 16-in. and 10-in. circuits for LPG and NGL respectively.

## General Description

Client Name:	Oil & Natural Gas Commission (ONGC)
Contract Award:	June 1989
Installation Date:	April 1990
Application:	LPG / NGL Import/Export

## Project Specifications

Water Depth:	29.4m (96.3ft)
Tanker Size:	50,000 dwt
Dimension:	9.5mØ x 3.8m
Floating Hose:	1 x 16-in., 1 x 10-in.
Underbuoy Hose:	1 x 16-in., 1 x 10-in. Chinese Lantern

Hawser System:	13-in. Single hawser
Anchor Leg System:	6 x 2.375-in. Grade U3
Anchor System:	24-in. Ø Piles

## Design Environmental Criteria

Operational	
Significant Wave Height:	2.8m (9.2ft)
Wind Velocity:	9.1m/s (17.7 knots)
Surface Current:	1.2m/s (2.3 knots)

Survival	
Significant Wave Height:	5.4m (17.7ft)
Wind Velocity:	29.9m/s (58 knots)
Surface Current:	1.9m/s (3.7 knots)

## Comments

Included in the scope of design and supply is a complex PLEM with three bays for individual 36-in., 24-in., and 18-in. piping manifolds which are mounted on a frame attached to the sea floor. Each bay will accommodate a pig launcher/receiver and branches for underbuoy hose connectors.