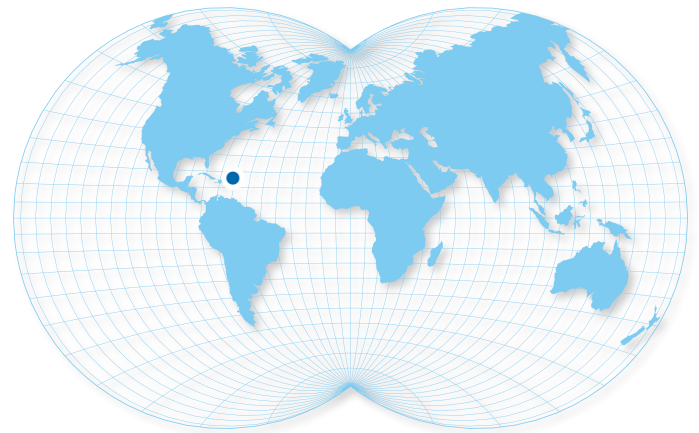


ST. EUSTATIUS, NETHERLAND ANTILLES: NuStar CALM



Scope of Work

SOFEC designed, constructed, and shipped a replacement CALM Buoy for the system SOFEC installed in 1994 for Statia Terminals, N.V. in Tumble Down Dick Bay on the Northwest side of the Island of St. Eustatius.

The CALM Buoy is designed to transfer crude oil to and from tankers up to 520,000 DWT with an unloading rate of 90,000 bph and loading rate of 100,000 bph. It is located in 64m (212ft) of water and is designed for a 21.3m (70ft) maximum wave height. It carries an ABS Classification A+ and is designed and fabricated in accordance with ABS Rules for Building and Classing Single Point Moorings.

General Description

Client Name:	NuStar Energy
Contract Award:	October 2007
Installation Date:	May 2008
Application:	Crude Oil Import / Product Export Trans-shipment Facility

Project Specifications

Water Depth:	65m (213ft)
Tanker Size:	520,000 dwt
Dimension:	12.5mØ x 5.8m
Floating Hose:	2 x 24-in., 1 x 20-in.
Underbuoy Hose:	2 x 24-in., 1 x 20-in. Lazy S
Hawser System:	15-in. Dual grommet
Anchor Leg System:	6 x 3.4375-in. ORQ stud link chain
Anchor System:	6 x 20mt Stevshark anchors

Design Environmental Criteria

Operational	
Significant Wave Height:	3m (9.8ft)
Wind Velocity:	12.9m/s (25 knots)
Surface Current:	0.8m/s (1.5 knots)
Survival	
Significant Wave Height:	11.5m (37.8ft)
Wind Velocity:	38.3m/s (191 knots)
Surface Current:	1.5m/s (3 knots)



NuStar CALM

(Continued) Comments

The system is designed to survive hurricane conditions in 'Hurricane Alley' of the Caribbean Sea. It is equipped with a sophisticated SCADA system for remote load monitoring, valve control, leak detection, operating pressure monitoring and battery status. The crude is shipped through a 48-in. subsea pipeline to a temporary storage at the Stacia Terminal tank farm, from where it is re-loaded onto smaller tankers for delivery to Gulf of Mexico refineries.