New Structures

Post-Tensioning

Sakhalin LNG Plant, Sakhalin Island, Russia

FREYSSINET
SUSTAINABLE TECHNOLOGY

Client
Sakhalin Investment Energy Co

Principal Contractor
Chicago Bridge & Iron Co

Specialist Contractor
Freyssinet Ltd

Contract Value
£800K

Works Commence
August 2005

Works Completed
September 2006

The LNG plant is located on the Pacific coast of Sakhalin Island, Russia which is a cold climate with daily temperatures at sub zero level from November to March enabling the site to operate from April to December only.

Each of the two tanks has a capacity of 130,000m³ for the storage of "Liquefied Natural Gas", a wall height of 39m and an internal diameter of 66m.

Freyssinet scope for these works is for the design and detailing of the post tensioning system, plus the supply of the PT materials, the hire of specialist PT plant plus the supply of on site Technical Assistance for the duration of the installation of the works.

The post tensioning system for each tank comprises of 70 No "hoops" with each "hoop" comprising of 2 19C15 tendons installed in the form of horizontal tendons only stressed at buttresses located at 90 degree apart.

Prior to the approval and supply of the Freyssinet C Range anchorage system for this project full scale Cryogenic testing of a complete anchorage and tendon was undertaking by Freyssinet Technical Department within PPC factory facility in May 2004.

To date partial strand installation and stressing activities have been undertaken in joint venture with FIC. Works shall resume in April 2006.

Due to the cold climate conditions and constraints in the works programme tendons could not be grouted following the completion of the 1st stage stressing activities. To overcome the problems of potential corrosion of the strand during the winter months soluble oil (Shell Dromus B) was injected into the ducts periodically during this time to give a short term temporary corrosion protection and allowing the tendons to be grouted during the spring when warmer temperatures will be achieved.

Freyssinet Ltd. Innovation House, Euston Way, Town Centre, Telford, Shropshire, TF3 4LT
Phone +44 (0) 1952 201901 Fax +44 (0) 1952 201753 Email info@freyssinet.co.uk