



SOUTH HOOK LNG TANKS



This two year project for main civil contractor, Taylor Woodrow, involves the post-tensioning of five large Liquid Natural Gas (LNG) storage tanks located in Milford Haven, South Wales.

Project & Construction Details

Each tank will be 35m high and 92m in diameter. Post-tensioning is favoured over traditional reinforcement for use in cryogenic applications because of the ductile characteristics of the high tensile steel strands at low temperatures.

The cylindrical concrete tanks were slip-formed to speed up the construction programme. A series of vertical and horizontal ducts were cast at approx. 300mm centres within the tank walls. Once the tank walls obtain the required design strength, the strands will be feed into the ducting, ready to be stressed using a specialist "multi-strand" jacking operation, thus increasing the tensile capacity of the concrete and ensuring the tank is robust enough to withstand the pressure should the inner tank leak. To complete the operation the ducts are filled with pressurised cement grout.

Slip-form operations on all five tanks are due to be completed by the end of February 2006, with the stressing operations due to commence in April 2006 and programmed to be finished by March 2007.

Project Statistics

- Horizontal Cables = 660 No. 19 x $\text{Æ}15.7$ Strands
- Horizontal Cables = approx 145m long each
- Vertical Cables = 440 No. 12 x $\text{Æ}15.7$ Strands
- Vertical Cables = approx 70m long each ('U' tendons)
- + 2500T of $\text{Æ}15.7$ High Tensile Steel Strand
- + 2,000km of $\text{Æ}15.7$ High Tensile Steel Strand
- + 125km of galvanised ducting



Project Data Sheet

Year:
2006-2007

Location:
Wales, UK

Client:
Qatar Petroleum &
Exxon Mobil

Division:
Structural Systems (UK)
Limited

Scope:
Post-Tensioning to 5
LNG Tanks

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