



Project Profile – OMV Maari Field

Tyco Thermal Controls' Oil Field Services Group, for over 20 years, has satisfied the unique requirements of downhole heating to increase production rates by eliminating paraffin deposits and hydrate formation in the production of waxy crude by lowering their viscosity or improving production in steam-assist wells.

Project Description

- ❑ **Client/Owner:** OMV New Zealand, Ltd.
- ❑ **Location:** Maari Field – offshore New Zealand
- ❑ **Type of System:** Electric heat tracing for offshore oil production facility
- ❑ **Technology:** PetroTrace™ STSi Skin-effect Tracing System
- ❑ **Number of Wells and Well Depth:** Five (5) with wax appearance issues — Heater depths up to 2100 m
- ❑ **Date Initiated / Completed:** March 2006 / July 2009
- ❑ **Contract Scope:** Front-end loading effort to prove out the design; engineering and procurement for the electric heat-tracing and ancillary components; control & monitoring and transformers

Project Details

This project utilizes PetroTrace STSi Skin-effect Tracing Systems to mitigate wax buildup in the well's production tube to maintain consistent oil flow from reservoir to topside. Specifically, an STS™ wire is inserted into coiled tubing filled with dielectric fluid, which is in turn installed inside of an offshore production tube to deliver heat along the length of the entire production wellbore maintaining the flow rates necessary to prevent wax buildup.

Historically, for similar wax mitigation applications, Tyco Thermal Controls would employ heaters externally strapped onto the production tube, such as the Petrotrace DHSX™ or Petrotrace MI product lines, but project-specific restrictions and constraints made those technology applications difficult, if not impossible to use. Therefore, a unique and innovative solution, was developed utilizing the STS technology, resulting in the first ever application of Skin-effect Tracing System to downhole heating.

Tyco Thermal Controls provides modeling services in order to arrive at temperature profiles comparing heated and unheated production tubes using local reservoir conditions, thus enabling maximized design efficiency and establishing an investment payback time frame.

PetroTrace™





Oil Field
Services
Group

We manage the heat you need™

PetroTrace STSi heaters are ideal for deep wells and for installations where space within the well is limited. STSi heaters installed inside coiled tubing within the production wells allow for maximum heat transfer and ease of installation.

The PetroTrace STSi heaters installed on these wells provided power outputs up to 150 W/m for a total of up to 315 kW per well. Maximum heat transfer was achieved by installing the heaters within the production tube. The successful development of this field was largely due to the efficient heat transfer of the STS system, preventing the crude from reaching the wax formation temperature even with only a 3°C variation between the reservoir and wax appearance temperatures.

Specific challenges inherent to this type of project included the tight installation constraints between production tube and casing, thereby necessitating the unique solution of system deployment through the production tube itself. Another distinct challenge was in minimizing the topside (i.e. platform) footprint relative to the power supply and associated system controls. Tyco Thermal Controls' solution was to combine the systems to a common power and control scheme, thereby minimizing the need for several large pieces of topside equipment.

Tyco Thermal Controls is the world leader in heat-tracing solutions. We will continue to pioneer new technologies and products to meet the needs of rapidly evolving worldwide markets. In an increasingly global economy, customers recognize Tyco Thermal Controls as a partner whose global capabilities translate into global solutions.



As additional unconventional reservoirs are developed, project-specific solutions such as the PetroTrace STSi Skin-effect Tracing System, utilized for the Maari Field Project, which prove to be reliable and provide realistic returns on investment will be necessary. With over 50 years of heat-tracing technology experience and global resources, Tyco Thermal Controls is equipped and committed to exploring all potential solutions.

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