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CASE STUDY

Industrial, Oil & Gas

How Moody Heat Exchangers Refurbished a WeldPack® Heat Exchanger for an Oil & Gas Production Company

Overview

With oil and gas operations in the UK, Netherlands and Egypt producing on average 7,000 barrels of oil and gas per day, this producer's offshore sites run a number of heat exchangers to ensure essential cooling takes place. Welded heat exchangers are used for first stage cooling and stabilisation as the raw crude oil is drawn up. They are used for a Lean-Rich TEG (tri-ethylene glycol) interchange, which is the process of firstly cooling the product with a Lean TEG stream, followed by transferring this heat to the Rich TEG stream to dehydrate the natural gases.

The customer's Vitherm WeldPack® welded heat exchanger was damaged during production and after failing an on-site integrity test, they knew they needed to look at solutions urgently.

As the unit is a core requirement for operation, a quick turnaround and fit for purpose service was essential.

They reached out to Moody Heat Exchangers and a number of other suppliers to discuss their options. As a **Vitherm Authorised Distributor** and with their state-of-the-art refurbishment centre, Moody Heat Exchangers were able to offer the quickest and most effective solution for the oil and gas producer.

Our Approach

The most appropriate solution provided by Moody Heat Exchangers was to refurbish the WeldPack® and return the heat exchanger to full integrity and capability.

The unit was sent to Moody Heat Exchangers' site and after preliminary pressure and integrity testing took place, an investigation and report into the failure was carried out.

The testing as expected, demonstrated leakages. Further investigation and removal of the side panels from the Lean TEG passage revealed that the graphite sealing material was over compressed and compromised. Further pressure testing with both side panels open allowed the experienced team of engineers to identify the exact locations of the leaks.

All information gathered during this testing process was shared with Vitherm and the customer to ensure full understanding of the failure.

Integrity Testing

Refurbished - New Core

Returned to Offshore Site

Optimisation

A new WeldPack® core was quickly sourced and replaced along with new graphite seals installed onto the core. Each side panel was torqued to the manufacturer's specified tolerance. A pressure test was carried out to 16.5 barg to ensure external integrity. An unbalance 5 barg open to atmosphere (0 barg) test was also performed on the lean TEG passage then reversed and tested on the rich TEG passage.

The unit was painted and packaged for return. All certification for tests and gauges were supplied, as is done for all work carried out by Moody Heat Exchangers.

Results

The newly refurbished WeldPack® welded heat exchanger's performance has been enhanced and no longer fails pressure and integrity testing. From the initial query through to reinstallation of the unit on the offshore site, took under 7 weeks.

As a quick turnaround was essential to the customer, Moody Heat Exchangers ensured the refurbishment process was done as quickly and professionally as possible to ensure they were back operating at full capacity as soon as possible.

Summary

An oil and gas producer's Vitherm WeldPack® welded heat exchanger was damaged during a production run, which resulted in a failed integrity test. They reached out to suppliers for quick and appropriate solutions. After choosing Moody Heat Exchangers, the WeldPack® was sent to their state-of-the-art facility to be refurbished.

In-depth testing and investigations took place to identify the problem and the cause of the leakage. As a **Vitherm Authorised Distributor**, they were able to quickly source the replacement components and install. After a final test to ensure a pass, the newly refurbished unit was sent back to the customer all in a matter of weeks.

The Lead Engineer said; "We chose Moody Heat Exchangers to work with as they were professional and experienced within the oil and gas sector. If production is slowed or even stopped it can cause us major problems, therefore the quick and effective approach offered by the Moody team was exactly what we were looking for. We look forward to working with Moody Heat Exchangers again in the future".