

Getting closer to your business

CALTEX PREVENTS COSTLY COMPRESSOR DOWNTIME FOR OFFSHORE CPP USING VARTECH® ISC

VARTECH® ISC removes high build-up of varnish in centrifugal compressor, helping decrease temperatures by 15°F (~9°C).



THE CHALLENGE

The Offshore North Pailin Central Processing Platform (CPP), owned by Chevron Thailand Exploration and Production, Ltd., relies on the smooth running of its Centrifugal Compressor to ensure uninterrupted operations, achieving optimum output. Early in 2023, the operator was alerted to an unusual spike in temperature to the thrust bearing of the power turbine unit. This type of fluctuation in temperature could easily result in disruptive downtime and subsequent loss of output for the offshore platform.

The in-country Caltex Advisory team were deployed to help troubleshoot the issue and found that the turbine oil in the compressor was at least 5 years old and displaying high-levels of varnish and debris build-up, causing high-temperatures across the bearings.

COMPANY:

Chevron Thailand Exploration and Production, Ltd.

LOCATION:

Gulf of Thailand – North Pailin CPP

APPLICATION:

Centrifugal Compressor on Offshore CPP

EQUIPMENT:

Power Turbine: Siemens RT-56M

Compressor: Dresser Rand D10R8-7B

Gearbox: MAAG SG 470/4

SOLUTION:

VARTECH® Industrial System Cleaner (ISC)



THE RESULTS

After implementing VARTECH® ISC, temperatures improved almost immediately which resulted in an improved heat transfer across the bearing, lowering the overall temperature by 15°F (~9°C) with no further spikes reported after application.

Throughout the Caltex LubeWatch oil monitoring programme, the in-service oil showed improvement after the VARTECH® ISC application, with before-and-after comparisons showing a clear insoluble MPC drop from 71 to 27 (ΔE), demonstrating VARTECH® ISC's effectiveness in solubilizing the varnish present.

The filter debris collected and analysed confirmed that VARTECH® ISC helped remove hard varnish deposits and debris that had accumulated in the system. The combination of products recommended and the timely support from the Caltex Advisory team ensured that there was no disruption to operations, and the improvement of the in-service oil has prevented the risk of heat related shutdowns to the equipment.



Reduction in contaminants

Improved heat transfer

Effective varnish removal

SOLUTIONS DEPLOYED

VARTECH® Industrial System Cleaner (ISC) at 10% to existing lube system

VARTECH® Industrial System Cleaner (ISC) is a deposit cleaning product which is added directly to the oil in use during operation to clean a system of varnish and sludge before a scheduled oil change. VARTECH ISC prepares the system for optimum performance of a new, fresh oil change.

GST Advantage® RO

Change the turbine oil to GST Advantage® RO 32 with VARTECH® Technology once cleaning is completed. GST® Advantage RO high performance industrial gas and steam turbine oils are formulated with advanced technology chemistry combined with premium base oils that inhibit varnish formation and help maintain peak performance, reliability and productivity.

Caltex Advisory Service

Operating and maintaining today's equipment is more complex and expensive than before, and lubrication requirements are constantly changing. The path to higher efficiency and productivity can start with a Caltex Best-in-Class assessment. Our Caltex Advisory team can perform an in-depth diagnosis on your operational needs and gaps, and provide holistic insights on how and where your business can improve, to help you achieve happier outcomes for your operations.

Caltex LubeWatch oil monitoring programme

Caltex LubeWatch oil analysis enables you to track the performance of fleet vehicles and equipment that is the lifeblood of your business. Through regular oil analysis, vehicle and equipment life and oil replacement intervals can be optimised and lubricant needs can be identified, and the changing environment within the equipment can be monitored.

THE RECOMMENDATION

The Caltex Advisory team recommended the VARTECH® Industrial System Cleaner (ISC) to remove the build-up of varnish in the system. This was to be added in two instalments over a 6-week period to approximately 10% of the lube oil capacity. Once the system had been cleaned, it was further recommended to switch out the turbine oil to GST Advantage® RO 32 with VARTECH® Technology.

During this period, the Advisory team recommended focusing on monitoring the thrust bearing temperature and the in-service oil using the Caltex LubeWatch oil condition monitoring programme; taking oil samples at regular intervals, both before and after the addition of VARTECH® ISC to monitor any changes in the quantity of varnish present.



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V1-0225