



SHELL TURBO GT HELPS POWER PLANT TO INCREASE OIL-DRAIN INTERVALS BY 500%



COMPANY: Power plant

COUNTRY: Germany

APPLICATION: Gas and steam turbines

BENEFIT: 500% increase in oil-drain intervals

KEY EDGE: Shell Turbo GT 32, Shell LubeAdvisor

Commissioned in 1993, a German gas and steam turbine combined heat and power plant was experiencing turbine trips. These were the result of an increase in bearing temperatures that caused the mineral-based oil to degrade rapidly (after 5,000–6,000 running hours) and form sludge and varnish.

The Shell technical team undertook a Shell LubeAdvisor assessment and recommended that the company should change to Shell Turbo GT 32 turbine oil. This oil is specially developed for turbines with high thermal stress.

Before using Shell Turbo GT 32, the turbines' average oil-drain interval was 5,000–6,000 operating hours. Using Shell Turbo GT 32 increased this to 30,000 operating hours – a 500% improvement – by maintaining the bearing temperatures, which reduced the stress on machinery, and decreasing deposit formation. Unplanned downtime was also eliminated and the turbines' total downtime decreased by about 100 hours a year.

The manageable temperature changes have reduced maintenance, oil consumption and downtime issues, and resulted in significant bottom-line savings, reports the power company.



1

CHALLENGE

A German gas and steam turbine combined heat and power plant was experiencing turbine trips as a result of an increase in bearing temperatures that caused the mineral-based oil to degrade rapidly (after 5,000–6,000 running hours) and form sludge and varnish.

2

SOLUTION

The Shell technical team undertook a Shell LubeAdvisor assessment and recommended that the company should change to Shell Turbo GT 32 turbine oil. This oil is specially developed for turbines with high thermal stress.

3

OUTCOME

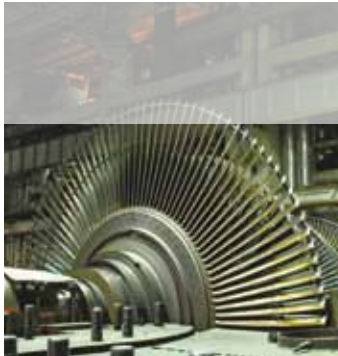
Using Shell Turbo GT 32 turbine oil increased the average oil-drain interval of the turbines at the power plant by 500%. Unplanned downtime was also eliminated and the turbines' total downtime decreased by about 100 hours a year.

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VALUE

The manageable bearing temperature changes from using Shell Turbo GT 32 turbine oil have reduced maintenance, oil consumption and downtime issues, and resulted in significant bottom-line savings, reports the power company.¹

¹The savings indicated are specific to the calculation date and mentioned site. These calculations may vary from site to site and from time to time, depending on, for example, the application, the operating conditions, the current products being used, the condition of the equipment and the maintenance practices.



SHELL TURBO OIL GT

HIGH-PERFORMANCE INDUSTRIAL GAS TURBINE LUBRICANT

Shell Turbo Oil GT has been developed for the most severe operating conditions imposed by modern, heavy-duty industrial gas turbines.

Applications

- Shell Turbo GT is used as lubricating oil for main shaft bearings and mechanical gears, and as the governor oil in the turbine control valves in modern gas turbines.
- Shell Turbo GT may also be used for other industrial applications requiring a high-performance gas turbine oil, such turbo compressors.

Performance features and benefits

- Outstanding oxidation stability. Shell Turbo GT's long service life is a consequence of its oxidative stability.
- Greater protection against thermal degradation. High bearing temperatures, which are particularly severe during stop-start cycling conditions, may lead to bearing deposits and the formation of harmful sludge in the system which may subsequently result in expensive downtime and reduced service life of system components. Shell Turbo GT protects against this.
- Excellent air release. Shell Turbo GT offers effective air release and minimum foaming tendency, as required by modern gas turbines.

Specification and approvals

Shell Turbo GT is approved by or meets the requirements of Siemens TLV 9013 04; Alstom HTGD 90-117 V; GEK 27070, 28143A, 46506E, 32568f and 107395a; Siemens Westinghouse 55125Z3; GEC Alstom NBA 50001A; Solar ES 9-224W Class II; DIN 51515 Parts 1 (L-TD) and 2 (L-TG); ISO 8068; JIS K-2213 Type 2; ASTM D4304-06a Type I and III; and BS 489:1999.



Complementary products

Equipment	Lubricants
Gas and steam turbines	Shell Turbo C, Shell Turbo T