Shell Lubricants

POWER

Oil drain intervals increased by 500% leading to valuable savings

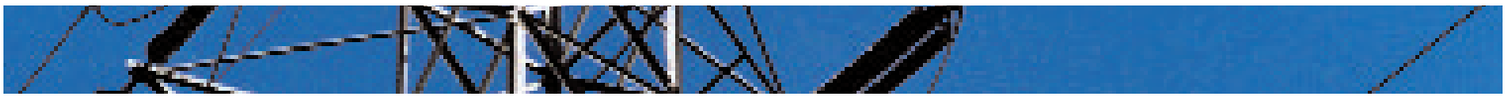
Country: Germany
Application: Gas and steam turbines
Saving: Oil drain intervals increased by 500%
Key edge: Shell Shell Turbo GT 32 and Shell Lube**Advisor**

Germany – A gas and steam turbine power plant.

An increase to bearing temperatures meant the oil degraded rapidly leading to sludge and varnish formation.

The combination of using Shell Lube**Advisor**, one of the Shell Product Plus Services to analyse the problem and then converting to Shell Turbo GT 32, a premium turbine oil, temperature changes became manageable reducing maintenance, consumption and downtime issues. This resulted in significant bottom-line savings.

POWER#002



1 The Challenge:

Commissioned in 1993, this combined heat and power unit initially ran on conventional mineral based oil which degraded rapidly during service (5,000 – 6,000 running hours). This led to sludge and varnish formation that, because of increased bearing temperatures cause the turbine to trip.

2 The Solution:

An initial Shell Lube**Advisor** assessment was undertaken and a change to Shell Turbo GT 32 turbine oil was recommended due to this quality product being especially developed for turbines with high thermal stress and having illustrated positive results in similar applications.

3 The Outcome:

- Prior to using Shell Turbo GT 32, the average oil drain interval was 5,000 – 6,000 operating hours. Shell Turbo GT 32 increased this interval to 30,000 operating hours
- Bearing temperatures were maintained reducing the stress on machinery (especially for turbine and gearbox bearings)
- Deposit formation decreased
- Elimination of unplanned downtime

4 The Value:

With bearing temperatures being maintained by Shell Turbo GT 32, the turbine runs more efficiently leading to a reduction in mechanical wear, oil consumption, maintenance and downtime, and an increase in oil drain intervals. The turbine's downtime decreased by approximately 100 hours per year and the oil drain intervals increased by 500%.

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.

Outstanding oxidation stability
The lubricant's service life depends, to a great extent, on its oxidative stability.

Greater protection against thermal degradation
Higher 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 subsequently may result in expensive downtime and reduce service life of system components.

Excellent air release characteristics
Effective air release with a minimum of foaming tendency as required by modern gas turbines.

Main applications
Shell Turbo GT is used as lubricating oil for main shaft bearings and mechanical gears as well as governor oil in the turbine control valves in modern gas turbines.

Further industrial applications
Shell Turbo GT may also be used for other industrial applications requiring a high performance gas turbine oil, like lubrication of turbo compressors.

Complementary Products Table	
Equipment	**Lubricants**
Turbines – Gas and Steam	Shell Turbo C, Shell Turbo T

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'Shell Lubricants' refers to the various Shell companies engaged in the lubricants business.