Customer Case

Lube Oil

Steam Turbine, Siemens SST-400, 65 MW

CUSTOMER SAVINGS & BENEFITS

Installing the CJC® Varnish Removal Unit VRU, the following benefits were obtained:

- No varnish - no risk of failure on heat exchangers, valves or bearings
- Reduced MPC values from 41.6 to 16.3 in 47 days
- No need for oil change - savings 28,000 EUR
- Reduced environmental impact

CUSTOMER

TIRME Environmental Technology Park Mallorca.
Urban waste management plant.

SYSTEM

65 MW Siemens SST-400 Steam Turbine.

Type:	V71A
Oil type:	Cepsa HD Turbines 46
Oil volume:	15,000 ltr.
Temp. operation:	58-62ºC

PROBLEMS

The high level of varnish detected during the periodic overhaul checks led to a corrective plan. The recorded average MPC values of above 30, indicated high failure risk of heat exchangers, valves and bearings, due to contamination with varnish and oil degradation products in the turbine.

SOLUTIONS

A **CJC® Varnish Removal Unit, VRU 27/108** with **CJC® Varnish Removal inserts VRi** was installed.

RESULTS

The MPC decreased from 41.6 to 16.3 over a period of 47 days. Due to thick layers of varnish deposited on the coldest surface areas in the system, filtration with the CJC® VRU was required for 2 years to stabilise the MPC value to below 15.

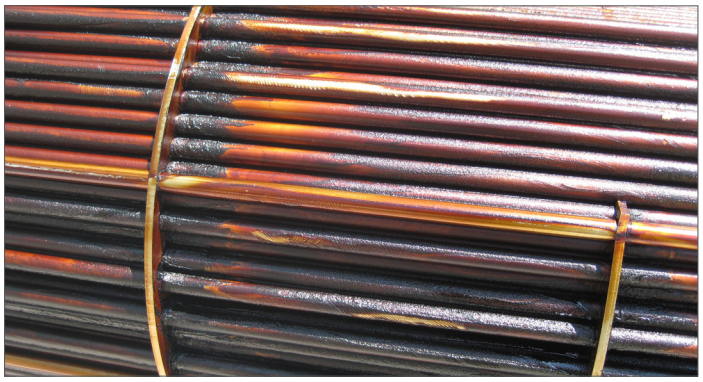
ECONOMICAL BENEFITS

In addition to possible system failures, the CJC® VRU avoided a cost of approximately €28,000 which the changing of 15,000 litres of oil would have incurred. If we also added the cost for oil supply/bleeding and disposal, the resulting cost would have been at least €3,000 higher.

ENVIRONMENTAL BENEFITS

Installation of the CJC® VRU prevented an oil change and waste oil, thus allowed Tirme to continue their environmental policy. The CJC® VRU has been keeping pollution at low levels for more than 3 years without altering the oil's properties.

TIRME Environmental Technology Park Mallorca with the CJC® Varnish Removal Unit VRU installed



Heat exchanger failure due to varnish build-up on the surface

Appearance of the oil after sampling at the CJC® VRU Filter - Inlet & Outlet.

	BEFORE CJC® VRU oil filtration	AFTER 47 days CJC® VRU oil filtration	AFTER 2 years CJC® VRU oil filtration
MPC Value	41.6	**16.3**	13.6

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Steam Turbine
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