



CLEAN OIL
BRIGHT IDEAS

CJC™ Application Study

Application Study
written by:

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2014

CUSTOMER

Major Power Plant in South Carolina, USA.

SYSTEM

System: Combined Cycle-Natural Gas
Turbine: GE7FA
Oil type: Mobil DTE 832
Oil volume: 6,000 gallons (22,712 ltr)

PROBLEM

Soft contaminants/varnish caused costly turbine trips even at moderate MPC (Millipore Patch Colorimetric), UC (Ultra Centrifuge) and ISO particle count levels.

SOLUTION

CJC™ Varnish Removal Unit, VRU 27/108 was installed.

TEST

The customer installed two different filter systems for a side-by-side test: A chemical bead filter on turbine CT1 and a CJC™ Varnish Removal Unit, VRU 27/108 on turbine CT2. The customer would purchase (2) two solutions of the filter system that performed the best.

RESULT

The CJC™ VRU out-performed the competition in both: Oil cleanliness and operational costs/ease of operation since only the CJC™ VRU would effectively signal a saturated filter. The customer purchased two CJC™ VRUs for both gas turbines CT1 & CT2 and is very satisfied since they have experienced:

"No more turbine trips!"

BENEFITS

Installation of the CJC™ VRU resulted in no more costly turbine trips. Furthermore, the customer will experience extended lifetime of both oil and components and lower maintenance costs.

CUSTOMER STATEMENT

Manager of Operations & Maintenance:
„Before installation of the CJC™ VRU, we were experiencing failed gas valve servo(s) just about every start. We tried other varnish removal units, but we were not getting the results we wanted. After we installed the CJC™ VRU, within a short time, the varnish problems we were experiencing, diminished. Our varnish levels dropped very low and we have not experienced servo problems since. We are very satisfied with the results and now have again the confidence of a complete start once the start button is pushed.“



CJC™ Varnish Removal Unit, VRU installed at a major power plant Combined Cycle-Natural Gas in South Carolina, USA

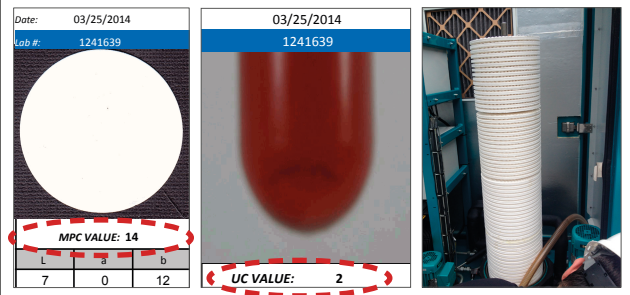
RESULT

Oil sampling tests, by TestOil, Varnish Analysis, US:

Oil samples - BEFORE installation

of the CJC™ Varnish Removal Unit, on turbine CT2
MPC value: 14 - UC Value: 2

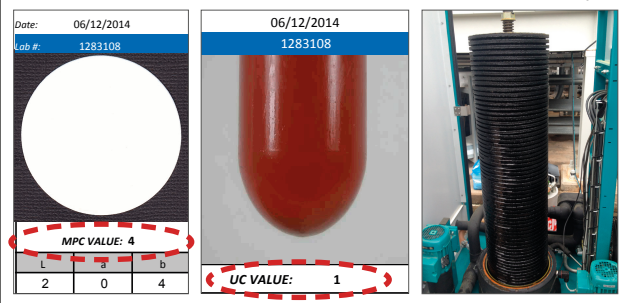
New CJC™ Varnish Removal Filter Insert before filtration process



Oil samples - AFTER installation

of the CJC™ Varnish Removal Unit, on turbine CT2
MPC value: 4 - UC Value: 1

Used CJC™ Varnish Removal Filter Insert after filtration process. Contamination now removed from the oil system



Particles (optical)	Before CJC™ Filtration 3/25/2014	After 3 days 3/28/2014	After 17 days 4/11/2014	After 11 weeks with CJC™ 6/12/2014
Particles	18/16/12	19/16/13	15/13/10	15/14/11
MPC value	14	14	4	4
UC value	2	2	1	1