CLEAN OIL
BRIGHT IDEAS

Lube Oil
Steam Turbine, Oil Refinery

CJC™ Application Study

Applcation Study written by:

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CUSTOMER

Major U.S. Refinery
The refinery processes over 240,000 barrels of crude oil a day.

THE SYSTEM

Dresser-Rand 28 MW TG 800
Steam Turbine Generator Set
Oil Type: ISO VG 32 Turbine Oil
Oil Volume: 1,000 gallons (3,785 L)

THE PROBLEM

Varnish contamination had caused hydraulic and servo valve sticking as well as bearing failures in several turbines. Another problem was that start-up and commissioning of new turbines was delayed for weeks as third party contractors were hired to perform oil cleanup. So a filter system was needed for a new steam turbine that would (1) remove organic varnish precursors from in-service oil, and (2) perform fast oil system clean up after construction.

THE SOLUTION

A CJC™ Fine Filter type HW 427/108 (Welded Base) was selected with **16 x CJC™ BLAT 27/27 Filter Inserts.**

The filter is set up to run in two modes:
- Normal - 18 gpm (4,088 L/h)
- Cleaning/Filling - 50 gpm (11,355 L/h)

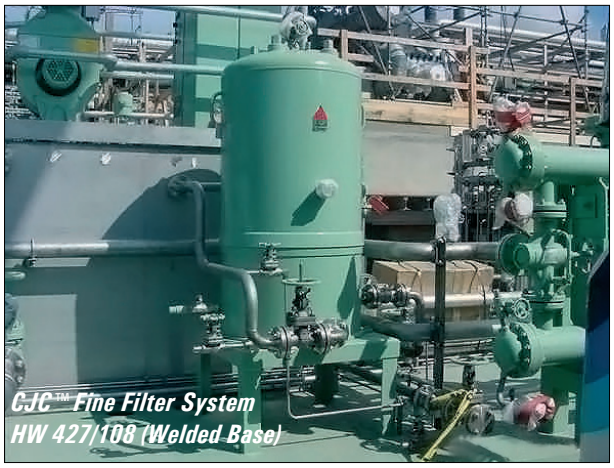
THE RESULT

In an isolated test the varnish potential was reduced by 87% in just 24 hours. The particle count improved by 3 ISO Codes. This represents oil that is 8 times cleaner and results in a life extension factor of 2.

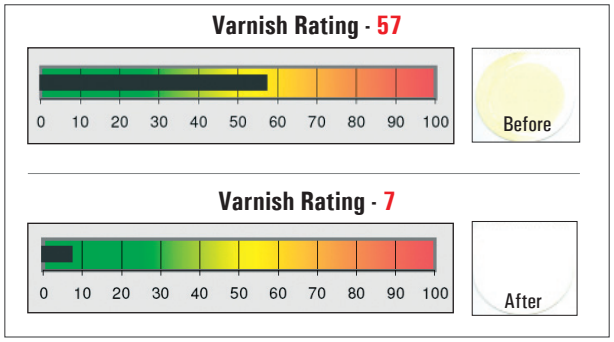
COMMENTS

"We have been advocating these secondary kidney filters for 2 years. The filters have value for varnish removal to keep in-service oil clean, which is a major concern of us reliability engineers, and fast oil system cleanup after construction, something our project and operations people highly value... this unit will greatly reduce clean up time and/or eliminate the need to hire rental equipment and contractors to do oil cleanup. Purchase justification is based on commissioning time savings alone, not varnish removal."


Refinery Overview


CJC™ Fine Filter System HW 427/108 (Welded Base)

OIL SAMPLES



RESULTS

Filtration Time	0 Hours	24 Hours
> 4 µm	647	89
> 6 µm	251	34
> 14 µm	19	2
ISO Code	17/15/11	14/12/8
Varnish rating	57	7
Membrane Color	Yellow Brown	White

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