CLEAN OIL
BRIGHT IDEAS

Gear Oil
Cooling Tower Fan Gears - Combined Cycle Power Plant
CJC™ Application Study

Application Study written by:

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2010

CUSTOMER
NAES (North American Energy Services)
Operated power plant: New Harquahala, Tonopah, AZ

THE SYSTEM
System: Cooling Tower Fan Gear: Amarillo
Oil Type: CONOCO Multipurpose R&O 220
Oil Volume: 83 L/22 gal

THE PROBLEM
One out of 18 cooling towers fan gears needed to be replaced per year due to premature failure caused by contaminated oil (water and particles).

THE SOLUTION
A **CJC™ Fine Filter HDU 15/25 PV** with a flow rate of 55 L/h was installed, using **CJC™ Filter Insert BG 15/25** (3 micron) with a dirt holding capacity of 1.5 L.
Pump type PV2-7-4 and 0.25 gpm.

FINANCIAL BENEFITS
The installation has paid for itself after one year with no oil changes and no faulty gear boxes.

THE TEST
The installation of the CJC™ Fine Filters was completed in August 2009 and the filters have been running continuously since then.

THE RESULT
After 12 months of continuous operation oil samples were taken with excellent results.
In average an ISO code of 16/15/11 is being maintained with not detectable water contents.

One year after installation not one gear box had to be changed and the filters are still running on their first insert, maintaining a better than new oil condition for particles and water with the first set of inserts.


Cooling Towers at the Power Station


CJC™ Fine Filter HDU 15/25 PV Installed at New Harquahala Power Plant

THE RESULT

	General Average Oil Sample Examples **WITHOUT** CJC™ Filtration	AVERAGE Oil Sample AFTER 12 Months **WITH** CJC™ Filtration
Particles > 4 µm	458,400	52,000
Particles > 6 µm	223,290	20,200
Particles > 14 µm	17,420	1,500
ISO Code 4406:99	23/22/19	16/15/11

Insight Service, Cleveland, Particle Count pr. 100 ml

CUSTOMER COMMENTS
Mr. Joe Hill, NAES (North American Energy Services)
"Before the installation of the CJC™ Filters it was hard to add oil to the gears and to monitor it's condition. With the CJC™ Filters now installed we can take oil samples and a pressure reading of the filter as indicator of the gear's condition. The oil stays in a better than new condition and we can now even add fresh oil to the gear box with the cooling tower in operation."

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