



**CLEAN OIL
BRIGHT IDEAS**

CJC™ Application Study

**Application Study
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CUSTOMER

Vattenfall A/S, Helsingør Kraftvarmeværk.
(Combined Heat and Power Station).

THE SYSTEM

ABB Steam turbine with 8,000 litres of Mobil
DTE AW 46, ISO VG 46.

THE PROBLEM

Oil samples from all oil systems at the combined
heat and power station were submitted for tests
at the Filtrex analysis company in the Nether-
lands.

The oil samples from the steam turbine revealed
a very high water content as well as high particle
contamination, rust and oxidation by-products.

THE SOLUTION

Installation of 1 **CJC™ Filter Separator PTU3
27/108 MZ-E2PW** with a pump capacity of 960
litres/hour and 4 **CJC™ Filter Inserts BLAT
27/27**.

CJC™ HDU Fine Filters were installed on the gas
turbine and the hydraulic power unit at the same
time.

THE RESULTS

Prior to installation of the filter, the oil sample
showed a water content of 31,400 ppm and
a particle content corresponding to ISO code
20/19/14.

After 1 month with the filter, water content was
reduced to 60 ppm and the ISO code was re-
duced to 16/14/10. After an additional 2 months
of filtration, water content was reduced to 24
ppm and the ISO code to 13/11/6.

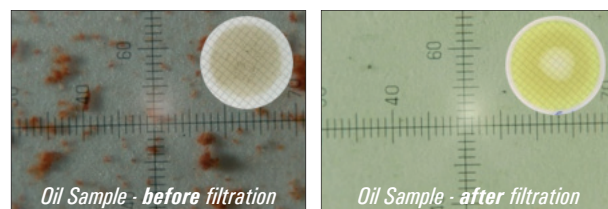
COMMENTS

Bjarne Karlsen, Operations Manager :
"After installation of the CJC™ Fine Filters and
the CJC™ Filter Separators on our lubrication
oil systems, we quickly solved the problem of
unacceptably high water content in the steam
turbine's lubrication oil.
An HDU Fine Filter installation on our gas turbine's
lubrication oil tank was also a great success."



Filter Separator PTU3 27/108 MZ operating at
Vattenfall A/S, Helsingør Combined Heat and Power Station

OIL SAMPLES



Oil Sample - before filtration

Oil Sample - after filtration

THE RESULT

	Before	After 1 month	After 2 months
Particles, > 2 µm	561938	45191	4481
Particles, > 5 µm	280715	15036	1937
Particles, > 15 µm	15950	822	52
ISO Code, 4407	20/19/14	16/14/10	13/11/6
Water, ppm	31400	60	24

PARTICLE AND WATER DEVELOPMENT

