



**CLEAN OIL**  
BRIGHT IDEAS

**Application Study**  
written by:

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2002



# Hydraulic Oil Power Plant Regulating Circuit

## CJC™ Application Study

### CUSTOMER

Hafslund ASA, is Norway's biggest electric-ity supplier with 550,000 customers. It is also leader in power transformation with 700,000 customers. The company has production plants in Norway and the USA.

#### Location:

Vamma Elvkraftverk (1,215 GWh), Østfold.

### THE PROBLEM

The control system to generator 11 has a hy-draulic regulating circuit with approximately 50,000 litres of oil. The oil in this circuit had an average contamination level corresponding to NAS9 and NAS7 according to tests taken over recent years. Moreover, there were large de-posits of oxidation residues in the oil. An off-line filter system from another manufacturer with a 6-micron strainer failed over a 5-month main-tenance cycle to provide an acceptable level of oil cleanliness.

### THE SOLUTION

The installation of a **CJC™ Off-line Fine Filter HDU 27/108 MZ** that came into service on the 11th January 2002. The filter was delivered with a process guarantee of cleanliness for the oil to be treated. Tests were taken at regular inter- vals and analysed independently by Cotax AS.

### THE RESULT

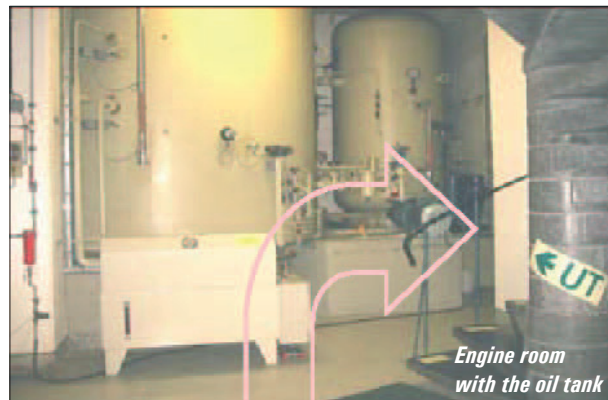
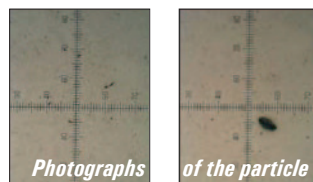
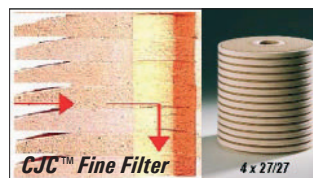
After only 14 days of operation the oil had reached an acceptable level of cleanliness. These included a longer oil life that reduced oil consumption, oil changes (50,000 litres) and disposal costs. Unplanned stoppages of the regulator due to oil contamination were also re-duced and less wear and tear on the system was achieved.

### COMMENTS

*Plant Manager Hugo Pettersen is very satisfied with the CJC™ system from Øvre-Johnsen. This has already led to other important projects at the plant including oil maintenance of trans-formers, generators and the protection of other hydrau-lic regulating circuits.*



Vamma Elvkraftverk  
(Electric Power Station), Østfold



### THE RESULT

Date	NAS	Water
18.04.01	9	120 ppm
11.02.01	9	120 ppm
18.02.02	4	40 ppm
25.02.02	2	40 ppm
29.08.03	1	40 ppm

Installation of CJC™  
Off-line FineFilter.