OIL FILTRATION SYSTEMS

CJC™ Application Study

Hydro Power Station - Governor System

INDUSTRY

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CUSTOMER

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THE SYSTEM

Governor oil system for Hydro Turbine. Oil volume: 5,200 L of hydraulic oil.

THE PROBLEM

The governor oil system was suffering from irregular and deviant operation caused by resin (oxidation) formation in the valves. The resin formation was identified as a sticky brown layer on all surfaces in the system. Due to resin formation valve malfunctions were becoming frequent, causing unplanned shut-downs.

The consequence of the contamination was that the valves had to be removed and cleaned up to 4 times a year at a cost of EUR 800 each time. The cost of a new valve is EUR 3,000.

THE SOLUTION

In order to arrest the problems and ensure continuous operation a CJC™ Off-line Fine Filter type HDU 27/54 MZ was installed. Two cellulose based filter inserts type B 27/27 (3µ absolute) were used. Cellulose is a highly polar material which ensures efficient adsorption of the resin from the oil system.

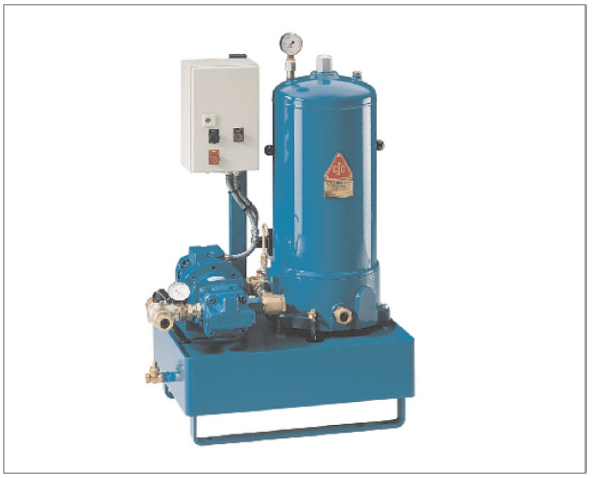
CONCLUSION

Despite the fact that the oil initially had a cleanliness which should indicate smooth and problem free operation the resin formation was causing irregular operation of the system.

The conclusion is that conventional surface filters are indispensable as in-line police filters, but they are not able to remove resin formation. The cellulose filter inserts in the CJC™ Off-line Fine Filter type HDU 27/54 MZ, however, adsorb the resin.

After just one month of filtration the turbine operation has become stable and without interruptions.

Statkraft Region Nord-Norge



CJC™ Fine Filter HDU 27/54 MZ

THE RESULTS

Date	Water content (ppm)	NAS
07.11.00	245	5
15.11.00	25	3
30.11.00	55	3
15.12.00	30	1

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