



CLEAN OIL
BRIGHT IDEAS

Turbine Oil Alstom GT8C Gas Turbine

CJC™ Application Study

Application Study
written by:

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CUSTOMER

Gorzów Power Plant S.A., Poland.

THE SYSTEM

Lubrication and regulation system of Alstom GT8C 54,5 MW gas turbine.
System's capacity: 20,000 L of Statoil oil type Turbway 46.

THE PROBLEM

In 1999 a new gas turbine equipped only with full-flow filters of 10 µm screening was installed. A seizure of the turbine's thrust bearing occurred in 2002. In the producer's opinion the heat exchange between the bearing and the oil had been adversely affected by increasing oil contamination and oil oxidation by-products as well as their sedimentation inside the oil system. In addition, the significantly worsened physical, chemical and lubricating characteristics of the oil were analysed. This diagnosis resulted in a decision to install an off-line fine filter.

THE SOLUTION

A CJC™ Fine Filter HDU 27/108 MZ-D equipped with CJC™ Filter Insert B 27/27 was installed. The filtration efficiency is 3 µm absolute and the contaminant holding capacity is 16 litres.

THE TEST

The test criteria of the solution was the effective and permanent removal of mechanical contamination and oxidation products. Also very important was the life time of the filter inserts.

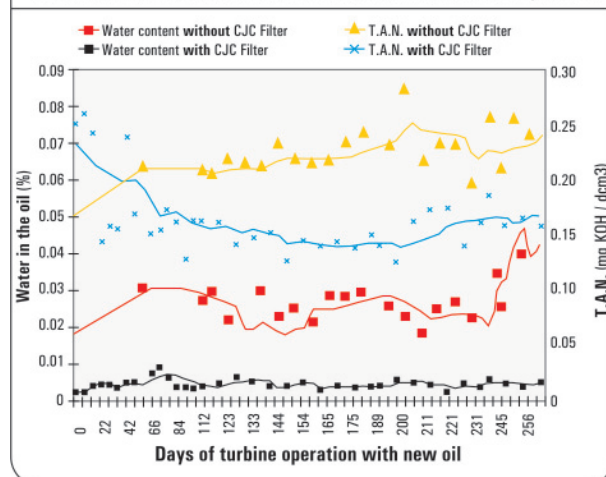
THE RESULT

An exceptionally high cleanliness level of the oil and the system were achieved. The temperature in control points was stabilised and servicing of full-flow filters became unnecessary. The CJC™ Filter Inserts used in the off-line filter were still functioning efficiently after 1.5 years.



COMPARISON GRAPH

Water content and acid No. comparison graph for the same lubrication oil in gas turbine without and with CJC Filter. Period without filter since the new turbine start/up in 1999.



THE RESULT

Date	Days of filtr.	Particle Nos.			ISO 4406	Resin %
		2 µm	5 µm	15 µm		
16.09.02	0	109,052	41,045	2,239	17/16/12	25
18.09.02	2	43,136	18,278	875	16/15/10	25
23.09.02	7	13,057	5,624	339	14/13/9	0
30.09.02	14	36,853	18,216	1,294	16/15/11	20
10.10.02	24	31,635	10,062	738	15/14/10	20
25.11.02	70	4,891	1,860	115	13/11/7	0
13.02.03	150	2,866	1,593	48	12/11/6	0

COMMENTS

Ireneusz Juskiewicz,

Heating-Mechanical Department Manager:

We did not expect such a high level of oil cleanliness with the installation of a CJC™ Fine Filter, but the results exceeded both ours and the manufacturer's expectations. The gas turbine oil system is not a problem for us any longer. We can recommend this solution with complete confidence.