

Governor Oil

Hydroelectric Power Plant, Hydraulic Turbine Control Oil

CUSTOMER BENEFITS & SAVINGS

By installing CJC® Fine Filters, the following benefits were obtained:

- The properties of the oil are now within specifications
- Oil change was avoided, no new oil needed to be purchased
- Environmental footprint reduced, as no used oil needed to be disposed

CUSTOMER

Compagnie Nationale du Rhône, CNR is a leading French producer of exclusively renewable energy: hydroelectric, solar and wind. CNR is the concessionaire for the production of hydroelectricity along the Rhône river.

Hydro Power Plant Location: BOURG-LÈS-VALENCE (Rhône- Drôme)
Contact person: M. NEVEU Arnaud

SYSTEM

6 x 30 MW Kaplan Turbines (total 180 MW), hydraulic turbine control oil
Make & type: SCHNEIDER ELECTRIC, Type VSB 1K700
Oil type: MOBIL TERESSTIC 68
Oil volume: 28,000 litres

PROBLEMS

A few years ago, after a successful test, the management of CNR embarked on a multi-year project to equip all sensitive hydraulic systems with improved oil filtration to obtain life extension of the oil, while maintaining oil properties intact. Kaplan turbines were the first focus, since the oil in the systems had a significant level of particle contamination above 60 mg/L (ISO 4405).

SOLUTIONS

CNR selected C.C.JENSEN to supply 6x CJC® Fine Filters HDU 2x27/108 MZ-E2PT for the turbines and 1x CJC® Fine Filter HDU 27/108 for two hydraulic systems which controlled emergency water discharge. These systems were selected for their efficiency in maintaining the oil free of particles and varnish in the commissioning and operation phases. Each oil filter features CJC® Filter Inserts B 27/27, rated at 3-micron absolute. The Filter Inserts also absorb humidity and remove varnish by adsorption.

FINANCIAL SAVINGS

The installation of the CJC® Oil Filters has resulted in large financial savings as changing oil was avoided:

- **Oil saving and reduction of breakdown:**
 With the installation one complete oil change was avoided- 28,000 liters per turbine plus 2 weeks of work.
- **In-line filters:**
Before installation of CJC®: Need to replace or clean the 12 in-line filters every 2-3 month (2H/2 people/per turbine).
After installation of CJC®: They only replace and clean the in-line filters ones every year, for preventive maintenance.

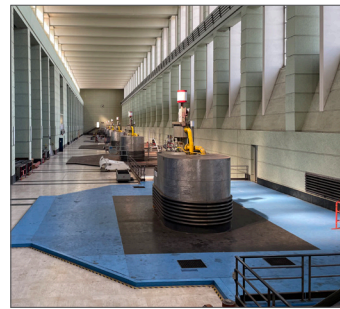
With the hydraulic turbine control running smoothly, they avoid penalties for either over or under production due to precise regulating and controlling of the water flow and volume.

ENVIRONMENTAL SAVINGS

Avoiding the oil change also has a significant impact of the environmental footprint of the hydro power plant and contributes to CNR's strategic objectives of being a CO₂ neutral company.



CNR Hydro Power Plant
Bourg-lès-Valence, France

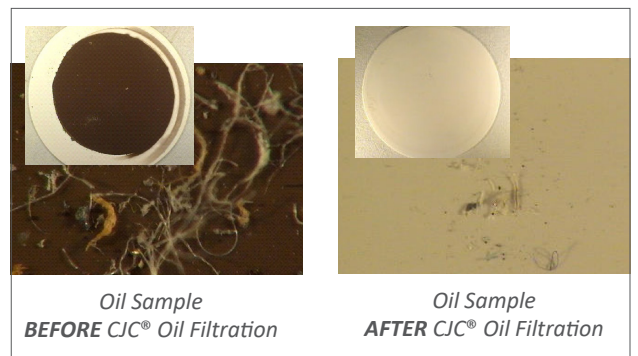


CNR Hydro Power Plant



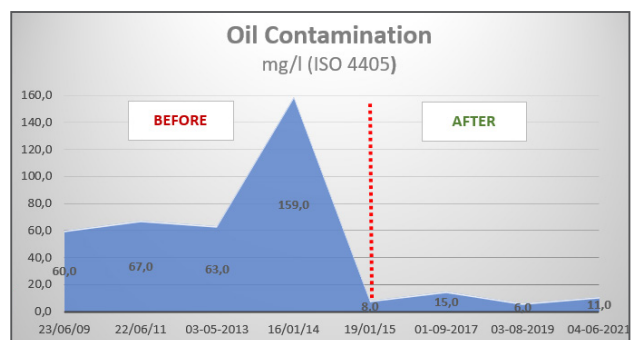
One of the six installed
CJC® Fine Filters

RESULTS



Oil Sample
BEFORE CJC® Oil Filtration

Oil Sample
AFTER CJC® Oil Filtration



CCPO6053-UK
 Hydro Turbine
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