



OIL MAINTENANCE
INDUSTRY

Application Study
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Turbine Oil Hydro Power, Oil Storage Tank

CJC™ Application Study

CUSTOMER

The second largest hydro power plant in the United States.

THE SYSTEM

Clean Oil Tank. Oil from Governor Oil Systems is periodically emptied into the tank where it is rapidly cleaned.

Oil Type: MOBIL DTE 799 (ISO VG 68)
Oil Volume: 10,000 gallons (approx. 37,854 L)

THE PROBLEM

Switching to a Group II base stock oil led to varnish precipitation in the turbine oil. This resulted in costly downtime and governor system failures.

The ISO Code was as high as 22/19/14. It was decided to purchase a high volume filter system to clean oil in the tank. The systems intended use was to remove particles, varnish, and other contaminants.

THE SOLUTION

A CJC™ Fine Filter HDU 8 x 27/108 KF-EPTY using CJC™ Filter Inserts BLA 27/27 was selected for its high volume capability, fine filtration rating of 3-micron absolute, and the ability to remove varnish by adsorption. The filter system was also the lowest cost system proposed from several vendors.

The system features two pumps for a combined flow rate of 70 gpm (approx. 265 L/min). A variable frequency drive allows for lower flow during periods where a high volume is not needed or when low oil temperatures result in high viscosity.

THE RESULT

The contamination level was reduced to ISO 13/10/6 at the conclusion of the test. This translates into a **total particle reduction of over 80%**. No significant levels of varnish have been detected in the oil.



High Volume Turbine Oil Filter System
CJC™ Fine Filter HDU 8 x 27/108 KF-EPTY



Used Filter Insert
Large Particles Captured
are Visible on the Surface

OIL SAMPLES

TEST SAMPLE	BEFORE	AFTER
ISO Code	22/19/14	13/10/6
Varnish Potential Color Value	-	2



Patch from Varnish Potential Test
Color Value (2) Indicates a Low Level of Varnish