



CLEAN OIL
BRIGHT IDEAS

Gear Oil Coal-Fired Power Plant, Mill Drive Gearbox CJC™ Application Study

Application Study

2011



CUSTOMER

Millmerran Power Station.
Division of Intergergen, Queensland, Australia.
850 MW Low Emission Coal-Fired Power Station.

SYSTEM

System: Mill Drive Gearbox
Type: Mobilgear 634
Volume: 600 L

PROBLEM

Millmerran Power has a total of 10xMill Drive Gear-boxes in the Power Station. High levels of metal contamination, and sometimes water, were evident in 2 of the gearboxes. Already in use had been an Off-Line Filter unit using the "Toilet Roll" style filtration. Other filtration companies had also hired filtration rigs to try to solve the problem, with no suitable result.

SOLUTION

CJC™ Filter Separator HDU 27/54 P-E2H1PT with a flow rate of 250 L/h.
CJC™ Filter Insert B 27/27, with a minimum of 4 kg of dirt holding capacity.
A hire unit, CJC™ Filter Separator PTU3 27/108, was utilised initially to obtain a result.

FINANCIAL BENEFITS

The C.C.JENSEN filtration was utilised to prolong the need to shut down 2 gearboxes. The cost-benefit of this could have entered into the millions, as there had been no available gearboxes worldwide to replace the damaged units and a new set of bearings had a 24 month lead time.

TEST

In utilising an available CJC™ PTU3 27/108 Hire Unit we were able to run the unit on one of the suspect gearboxes, whilst technical staff at the power station took oil samples at intervals.

OIL SAMPLES

14th of January 2009 - before installation of the CJC™ Filter Separator - oil sample results showed 1450 ppm of water and ISO 23/22/21.

RESULT

Jan. 25, 2009 the PTU3 27/108 was installed.
Jan. 27, 2009 oil sample results showed 131 ppm of water and ISO 23/22/19.
Febr. 2, 2009 the results were improved to 36 ppm of water and ISO 18/16/12.
The hire unit was removed and the B Filter Inserts were dried. The contamination weight in each filter inserts equated to 9 kg (metal contamination).
Samples were taken 36 days after, but since contamination was up again (108 ppm of water and ISO 22/22/20), 2 x HDU 27/54 P-E2H1PT were purchased.
This has made it possible to continue operations whilst waiting on parts.



Millmerran Power Station, coal-fired power plant, Australia, with the CJC™ Filter Separator PTU3 27/108 P installed



2E Gearbox



CJC™ Fine Filter HDU 27/54 P

RESULT

	Start, BEFORE CJC™ Filtration	AFTER 8 days CJC™ Filtration
Water content, ppm	1450 ppm	36 ppm
ISO Code	23/22/21	18/16/12

Oil samples were taken by Oiltest, NWS, Australia

COMMENTS

Mr Greg Lewis, Millmerran Power:

"We have taken one of our gearboxes out and had it overhauled, found where the metal was coming from, which has made us ask some questions to the manufacturer. We are currently reinstalling the gearbox. Your Jensen units are going fine, have not had any problems."