

GENERAL INFORMATION

INDUSTRY

Energy and gas

MACHINE

Synchronous generator – 47 MVA

TECHNOLOGY USED

Electrical measurements

PROBLEM ENCOUNTERED

Following electrical measurements taken during a partial overhaul, an anomaly in the measures of the shaft tension was discovered.

Measures of the shaft tension



RESULTS OF ANALYSIS

DIAGNOSIS

A spectrum analysis of the shaft tension highlighted the presence of a sequence of regular harmonics which indicated a probable defect in the insulation between the coils of the winding of the rotor.

EVALUATION

Serious

RECOMMENDATIONS

In order to confirm the abnormality found, the following advice was given: to measure the the dynamic impedance of the rotor and to perform static and dynamic reflectrametric tests on the rotor windings. Depending on tests results, to evaluate the possibility of replacing the alternator's rotor if necessary.

Generator



RESULTS OF ACTION TAKEN

RESULTS OF INSPECTION / CHECK UP

Subsequent test confirmed the presence of shorts in the rotor windings.

AVOIDED OCCURENCE

Emergency shut-down of the plant and subsequent replacement of the machine because of rotor damage.

AVOIDED DOWNTIME

Data unavailable

COST BENEFIT OF LOST PRODUCTION AVOIDED

Data unavailable

Generator

