

## POWERING A LOCAL UNIVERSITY

CLIENT  
**LOCAL UNIVERSITY**

EQUIPMENT  
**1300KVA LOW VOLTAGE  
[400/230V] ALTERNATOR**

APPLICATION  
**POWER GENERATION**

### INCOMING INSPECTION PHOTOS



### DEFECT REPORT

The initial inspection highlighted degradation of the insulations levels to the main rotor and exciter assemblies. However no obvious defects were visible.

Internal inspection of the alternator showed high levels of dirt build-up inside the terminal box arrangement on the outer casing of the frame and the terminal rails (**Fig 1**). There was also heavy carbon dust covering the main stator and main rotor windings (**Fig 2** and **Fig 3**).

The varistor mounted on the Diode Assembly was also found to be defective.



**Fig 1.** Terminal box assembly dirt build-up.



**Fig 2.** Carbon contamination to the windings.



**Fig 3.** Machine viewed from rear during the inspection process.

## WORK CONTENT REQUIRED

The machine was dismantled and a detailed visual inspection of all components was carried out followed by static inspection and testing of all of the wound components.

The bearing from the rotor assembly was removed and the wound components were washed and oven dried.

After drying, all wound components were subjected to an in-depth electrical test, before being re-impregnated and receiving an additional environmental coating (TOTAL+ Protection).

All non-wound components were cleaned; a new replacement bearing was fitted to the rotor assembly and the machine re-built incorporating a new replacement varistor.

After assembly, the alternator was dynamically tested at full load to confirm all circuits and the operation and function of the electronic regulator.

The external surfaces of the alternator were sprayed in the customer's colour and, after delivery, our engineer visited the site to carry out the re-commissioning.

## PHOTOGRAPHY DURING REBUILD



Main rotor EG43 coated pre assembly.



Main stator coated pre assembly.



Main stator windings coated with black compound.



Machine viewed from rear post assembly.



Machine post test.



Machine painted and ready for dispatch.