CASE STUDY

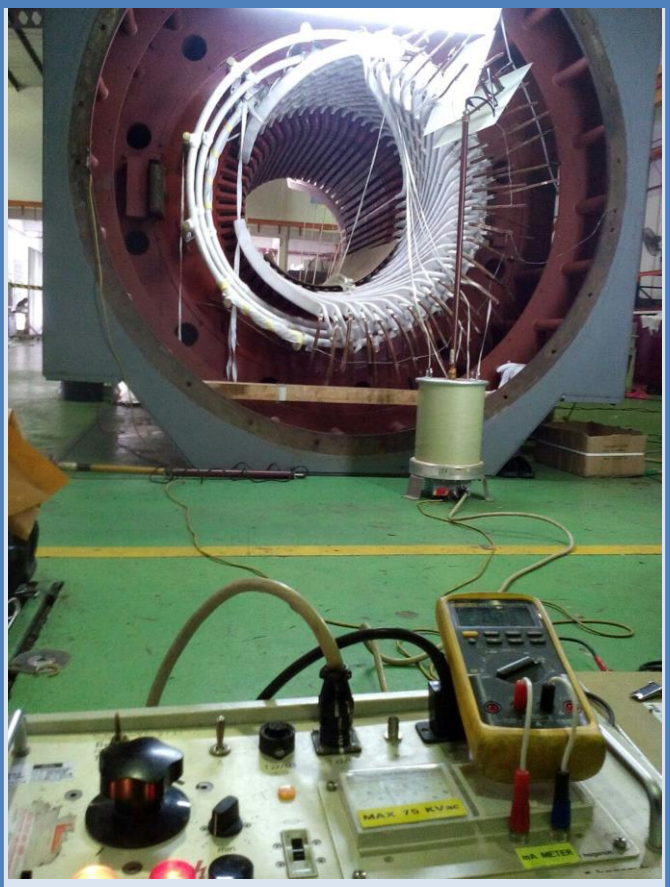
Our Client – Maser & Quartzelec Services Sdn Bhd

Scope of Work
Hi – Potential Testing on 11kV Motor Stator Winding – Production line test

Our task

Global Power Test (GPT) was engaged for Testing using the HAGENUK Hipot tester.

- The Hipot test is a non destructive test that determines the adequacy of electrical insulation for the normally occurring over voltage transient. This is a high-voltage test that is applied to all devices for a specific time in order to ensure that the insulation is not marginal.
- Hipot tests are helpful in finding nicked or crushed insulation, stray wire strands or braided shielding, conductive or corrosive contaminants around the conductors, terminal spacing problems, and tolerance errors in cables. Inadequate creepage and clearance distances introduced during the manufacturing process.
- HIPOT test is applied after tests such as fault condition, humidity, and vibration to determine whether any degradation has taken place.
- The production-line hipot test, however, is a test of the manufacturing process to determine whether the construction of a production unit is about the same as the construction of the unit that was subjected to type testing. Some of the process failures that can be detected by a production-line hipot test include, for example, a transformer wound in such a way that creepage and clearance have been reduced. Such a failure could result from a new operator in the winding department. Other examples include identifying a pinhole defect in insulation or finding an enlarged solder footprint.
- As per IEC 60950, The Basic test Voltage for Hipot test is the **2X (Operating Voltage) + 1000 V**
- The reason for using 1000 V as part of the basic formula is that the insulation in any product can be subjected to normal day-to-day transient over voltages. Experiments and research have shown that these over voltages can be as high as 1000 V.



Our engineering deliverables included:

- Test Equipment in accordance with Local and International Standards

- Input to the client's Completions Dossier, including Inspection and Test Records and as-built documentation.

Our field works included:

a. Generation of HSSE packs including Safe Work Method Statements, Permits to Work and compliance with the end-user's site induction requirements.

b. Testing the various winding phases in the Motor including;-
   - Condition Monitoring – Phasor & Zonal Fault type

Our Action:

- Agreed with the client on the scope of work.
- Quickly allocated and deployed Testing Engineers and GPT resources as required to maintain close integration with the client and end-user during the planning and implementation phases.
- Structured our field team to respond quickly and efficiently to ad-hoc Testing & Calibration schedule and scope changes.

Result

- All the Tests were fully carried out within the time allocated
- Completion of Test
- The client was satisfied that we managed to keep the schedule without any hiccups.