

# 4-Pole Steam Turbine Generator Minor Inspection

Quartzelec conducted a minor inspection of a 11,000kV, 50Hz, 4-pole air-cooled steam turbine generator during a full plant shutdown, with additional scope to replace braided flexi busbar in generator line & neutral cabinet

WASTE TO ENERGY | SOUTH WEST ENGLAND

## Our Customer's Challenge

The client faced uncertainty regarding the overall condition of their generator, particularly after discovering that an incorrect part had been fitted during previous maintenance. With a third party already conducting inspection work on the steam turbine, the client sought a comprehensive assessment of the generator to ensure the reliability of the entire system, including a minor inspection, coupled with expert analysis of the incorrectly fitted component, with testing and replacement if necessary, to prevent potential operational issues.

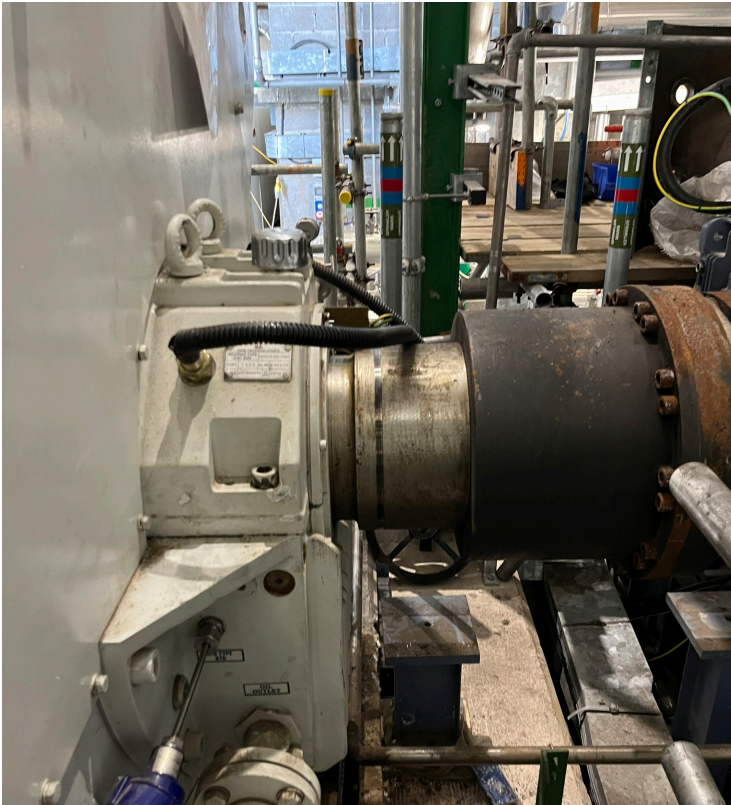
## The Quartzelec Solution

Quartzelec conducted a minor inspection of the generator, including visual and electrical inspections of the rotor, stator, and line and neutral cabinet. Electrical testing revealed that the flexi busbar in the line and neutral cabinet was unfit for purpose, while additional tests confirmed that the exciter and PMG were in good working order. Both the DE and NDE bearings were inspected, with non-destructive testing (NDT) performed on the top half as specified. Bearing clearances were measured before reassembly, and the coolers were visually checked for water leaks. Quartzelec concluded that the rotor, stator, exciter, and PMG were all electrically serviceable. However, the incorrect hardware in the line and neutral side cubicles was identified as a concern. After taking on-site measurements, Quartzelec swiftly sourced and replaced the correct component, ensuring minimal disruption and exceeding customer expectations.



## Key Benefits

- **Comprehensive Assessment:** Thorough inspection of the generator, ensuring all critical components, were evaluated for reliability
- **Issue Identification & Resolution:** The incorrect hardware and unfit flexi busbar were identified and promptly replaced, preventing potential operational failures and enhancing system integrity
- **Minimised Downtime:** By quickly sourcing and installing the correct part, delays were minimised, ensuring a smooth resolution without extended plant disruption
- **Enhanced Customer Confidence:** The detailed inspection, expert problem-solving, and swift response reassured the customer of the generator's condition



Client  
Confidence

Comp.  
Generator  
Inspections

Proactive  
Solutions