INLEX

LNG PLANT TRANSFORMER MAINTENANCE

Transformers are critical to the operation of any large industrial facility. Regular condition assessments and preventative maintenance are essential to ensure optimal performance, reliability and continued up-time.

THE CHALLENGE

The operator of a large LNG facility in Darwin, NT engaged Inlex to complete repairs and testing on a spare 4-winding 26MVA power transformer. The transformer's 33kV bushings were damaged during transport and needed to be replaced.

Upon inspection it was discovered pieces of broken ceramic bushing had fallen into the transformer tank and core necessitating removal of the core for further inspection and cleaning. This kind of intrusive work poses the risk of moisture ingress into paper insulation on the transformer windings and is usually conducted off-site in specialist climate-controlled facilities.

OUR APPROACH

Partnering with our sister company Safehouse, Inlex provided an innovative climate-controlled temporary habitat to store the transformer core on-site during repairs and protect it from moisture ingress. We worked closely with site personnel to manage crane operations, scaffolding, and permit to work requirements.

OUR SOLUTION

The transformer core was removed and stored in Safehouse's climate-controlled habitat. Dehumidification and air-conditioning equipment maintained optimal dry conditions of 20°C to 25°C, 18 to 21% RH and -0.5°C to -3°C dew point. Regular low voltage insulation resistance (IR) testing was completed on the windings to monitor moisture levels.

We removed and replaced damaged bushings, cleaned and inspected the tank and core, and replaced various gaskets and O-rings before vacuum drying and filling.

After the repair was completed, we performed a range of tests including IR, CT, DC winding resistance, voltage ratio, winding capacitance, SFRA, short circuit impedance, exciting current, DIRANA and oil sample analysis.

A complete repair and test report was provided.

THE RESULTS

The repairs were completed successfully in our unique ultra-dry habitat, without the need to transport the transformer to an offsite maintenance facility, saving our client time and minimising cost.

STATISTICS

25°C
HABITAT INTERNAL TEMPERATURE

21%
HABITAT RELATIVE HUMIDITY

-3°C
DEW POINT