

Sugar Mill Processing Plant: Transformer Maintenance and Diagnostic Services

Customer

Raw Sugar Mill

Location

Located across Queensland, this sugarcane operation is one of Australia's largest and are an integrated grower, processor, marketer and exporter of raw sugar.

Background

The customer approached Ampcontrol after raising concerns about the condition of a transformer located at one of their processing plants. Recent oil analysis results indicated occurrence of a serious T3 Thermal Fault - high temperature heating (> 700°C). Typically, these faults include large circulating currents in the tank and core, loose connections in the HV winding circuit, and misalignment of contacts in de-energised tap changers.

Ampcontrol were requested to review the test data provided by the asset manager, to offer an independent engineering opinion to help pinpoint the cause of the problem. This also included recommendations for further investigation and management of the asset.

The Solution

Ampcontrol's recommendations to the asset manager included regular DGA testing to monitor the fault and electrical testing to investigate the cause of the DGA gassing problem. This can often include Winding Resistance measurements to assess any looseness of contacts which can develop into overheating and arcing. Further recommendations also included an internal inspection / videoscope to identify burnt / misaligned contacts in the DETC (off load tap changer).

Acetylene generation in the transformer pointed to either the severity of the fault or the involvement of electrical contacts.

On receipt of Ampcontrol's recommendations, the asset manager conducted an internal investigation on the transformer. The source of the fault was identified as a contact in the DETC.

Achievements

Ampcontrol reviewed the oil analysis results and provided technical expertise including a repair plan to have the asset put back into operation. An unexpected disruption to production was avoided.



Image: Off load tap changer where fault was located

➔ **Transformer maintenance services including remote diagnostic support**