DEGNAN

CABOOLTURE FEEDER STATION

The Caboolture Feeder Station project is the upgrade of a 50kV traction feeder substation.

TYPE OF PROJECT:
Energy

LOCATION:
Brisbane, QLD
Yuggera & Turrbal Country

CLIENT:
Queensland Rail

PROJECT COMPLETION:
May 2025

PROJECT VALUE:
$8M

DELIVERY MODEL:
Construct Only

SCOPE:
Civil, Structural, Reticulation Systems, HV Cabling and terminations, Earthing, LV Systems, HV Cutovers

The Caboolture Feeder Station upgrade was required as the substation equipment had reached end of life. Upgrades were required to improve reliability, maintenance and system resilience. The overall project scope included:

- A new prefabricated switchroom, containing 50 kV gas insulated switchgear and associated ancillary equipment
- Associated civil and structural works to accommodate the new switchgear building.
- New power transformers including new civil works and bunding
- Installation of foundations, structures and Overhead Line Equipment (OHLE) for the transformer cable sealing end masts, including connection to existing 110kV switchgear
- Upgraded earth grid
- New lightning protection systems
- New cable reticulation systems including new trenching, pits, conduit routes, cable tray

Challenges

Being a brownfield upgrade with extensive civil works and trenching, a major challenge was working in and around an operational earth grid. Before inground works could commence, the temporary configurations of the earth grid were modelled and designed to ensure step and touch potentials were managed through all stages of construction. Further, construction processes had to be developed to allow sections of the earth grid to be cut and relocated safely.

Another project challenge was managing the numerous stakeholder interfaces included including Queensland Rail, Schneider (switchgear supplier) and Energex (the interfacing supply authority). During shutdowns, program was critical, so it was essential that each party was aware of their scope interfaces and program windows within the overall shutdown period. This was critical for both construction safety and program efficiency.