

CHALMERS STREET SUBSTATION COMMISSIONING



Abergeldie was engaged by Transport for NSW (TfNSW) to construct Chalmers Street Substation within the Prince Alfred Sidings Precinct, east of Central Station. The new substation forms part of the Power Supply Upgrade Program, which is designed to meet expected power requirements for Sydney's future rail network and new fleet of air-conditioned trains. EnerMech were engaged by RAJV to manage the commissioning on this project using EnerMech's AEO accreditation.

Client: Abergeldie & RCR Tomlinson Joint Venture (RAJV)

Year: 2018 - 2019

Product/Service:
Electrical and Instrumentation

Scope of Work

The scope included:

- Commissioning management
- Management of QA completions system
- Provided quality documents for the project
- 33kV Mitsubishi Switchboard Commissioning
- Circuit Breaker Timing Testing
- Micom Protection Relay Testing
- 1500V Switchboard Commissioning
- Microelettrica Scientifica Protection Relay Testing
- Current Transformer Testing
- Voltage Transformer Testing
- 33/11kV Power Transformer Commissioning
- 11/0.4kV Distribution Transformer Commissioning
- 66/0.6kV Traction Transformer Commissioning
- Rectifier Commissioning
- High Voltage Cable Testing
- Low Voltage Cable Testing
- UPS Commissioning – including Battery discharge testing

- Low Voltage Distribution Board Commissioning
- Automatic Transfer Switch Commissioning
- SCADA Testing with Sydney Trains
- Rail Earth Contactor / Voltage Limiting Device Commissioning
- Commissioning of Isolating Rail Connecting Switches

Test Equipment included:

- Omicron CPC100
- Omicron CMC356
- Omicron CMLIB A
- Omicron CT Analyser
- Omicron TD1
- Omicron Cibano 500
- AC Hi-pot tester
- 10kV I.R Tester
- 200A Ductor Tester
- 60kV VLF Tester
- Battery Discharge Tester (Torkel)
- Process calibrators

Project Delivery and Benefits

Chalmers Street Substation currently provides 1500V traction power for all suburban lines from Central Station to Wynyard Station, City Circle and the Eastern Suburbs Line, as well as power to signalling locations. Chalmers Street also supplies 11kV distribution power for Central Station and all stations around the City Circle and the Eastern Suburbs Line. The new facility is three x 5MW rectifier 33kV substation with twenty-seven DC circuit breakers. This provides support to the 1500V traction power supply in the area, so that it can sustain the additional train services and air-conditioned train loadings, improving network reliability and maintainability.

EnerMech successfully delivered this highly complex project with our experienced Rail SME's and HV Commissioning team.