



SPECIFICATION AND BACKGROUND

INSTALLATION AND COMMISSIONING OF 350KVA (APB DATA CENTRE) AND 600KVA (DFC DATA CENTRE) GENERATORS

LOCATION: APB DATA CENTRE, DFC DATA CENTRE

Technical Specification for 350KVA AND 600KVA Generator Installation

Technical Standards

The following standards are particularly relevant to the scope of works. This is not a fully comprehensive listing of all relative standards and normative references but rather a list of the more notable standards.

- IEC/TR 61439-0: Guidance to specifying assemblies
- IEC 61439-2: Power switchgear and control gear assemblies
- IEC 61439-3: Distribution boards intended to be operated by ordinary persons (DBO)
- IEC 61439-4: Particular requirements for assemblies for construction sites (ACS)
- IEC 61439-5: Assemblies for power distribution in public networks
- IEC 61439-6: Bus bar trunking systems (busways)
- IEC 60947: Low-voltage switchgear and control gear
- SANS 156: Moulded Case Circuit Breakers
- SANS 1019: Standard voltages, currents, and insulation levels for electricity supply
- SANS 1186-1: Symbolic safety signs Part 1: Standard signs and general requirements
- SANS 1195: Bus bars
- SANS 10142: The wiring of premises (all parts)

1. Installation of 350kVA Generator for APB Data Centre

The currently installed generator unit continuously fails and cannot reliably provide backup power to a critical infrastructure such as the data centre. The existing 200kVA generator used as a standby for the APB data centre, will now be moved to Mayine House to provide full backup power to students together with an existing 100kVA generator already operational at the residence.

Scope of Work

- Installation of 350kVA generator. The generator infrastructure must be complete with the following:
 - 350kVA diesel engine/alternator
 - Integrated fuel tank of +/- 700L, reinforced mild steel tank, complete with fuel level sensor/gauge, lockable fuel cap, fuel fittings.
 - Weatherproof, mild steel, powder coated with sound attenuated inlet and outlet louver boxes.
 - Residential silencer exhaust system.
 - ATS panel with smart gen/equivalent.
 - Batteries.
 - Phase integration to existing UPS equipment.
 - 1 year warranty on engine.
 - Commissioning including electrical COC.
- All other electrical equipment, materials and work not explicitly mentioned but nevertheless required to fulfil the following minimum requirements shall be deemed to be included in the scope of supply with no additional cost and time implication:
 1. Achieving the plant process requirements.
 2. To meet equipment and personnel safety.
 3. To meet the requirements of statutory approving authorities.
 4. To coordinate with other contractors and agencies involved at site for other activities and site work.

2. Installation of 600kVA Generator for DFC Data Centre

The 600kVA generator will replace a generator which was constantly failing at the DFC data centre.

Scope of Work

- Installation of 600kVA generator. The generator infrastructure must be complete with the following:
 - 600kVA diesel engine/alternator
 - Integrated fuel tank of +/- 1300L, reinforced mild steel tank, complete with fuel level sensor/gauge, lockable fuel cap, fuel fittings.
 - Weatherproof, mild steel, powder coated with sound attenuated inlet and outlet louver boxes.
 - Residential silencer exhaust system.
 - ATS panel with smart gen/equivalent.
 - Batteries.
 - 1 year warranty on engine.
 - Phase integration to existing UPS equipment
 - Armoured cable 120 mm sq. 4 core SWC.
 - Bare copper earth 75 mm sq.
 - Digging cable trench.
 - Construction of a concrete plinth to place the generator (Generator stand)
 - Commissioning including electrical COC.
- All other electrical equipment, materials and work not explicitly mentioned but nevertheless required to fulfil the following minimum requirements shall be deemed to be included in the scope of supply with no additional cost and time implication:
 1. Achieving the plant process requirements.
 2. To meet equipment and personnel safety.
 3. To meet the requirements of statutory approving authorities.
 4. To coordinate with other contractors and agencies involved at site for other activities and Site Work