# SOUTH AFRICAN REVENUE SERVICES (SARS)

# PROPOSED GIYANI OFFICE

**SPECIFICATION AND SCHEDULES**

**FOR**

**PRIME RATED DIESEL GENERATOR PLANT INSTALLATION**

## SECTION D: PARTICULAR SPECIFICATION

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**1.0 PROJECT OVERVIEW**

**1.1** The South African Revenue Service (SARS) intends to install a 200kVA Prime Rated generator set at their office in Giyani**.**

**1.2 THE SITE**

The site is Giyani ROR Office in Limpopo Province.

1. **ELECTRICAL SERVICES & SYSTEMS SCOPE OF WORKS**

**2.1** This specification covers the supply, delivery, installation, testing and commissioning of the complete electrical installation and reticulation to the entire satisfaction of the Employer and Consulting Engineer

**2.2 Overall Scope of Electrical Works**

The full range of electrical installations for a 200kVA Prime Rated generator. This includes the following;

* Prime Rated Power (Diesel Generator)
* Power Distribution
* Earthing and Lightning Protection Systems.

**2.3 Design Standards**

The design and installation of the electrical systems will be strictly in accordance to the relevant local and international regulations, standards and design guides including the following;

#### [a] SANS 8528 – Reciprocating internal combustion engine driven alternating current generating sets

#### [b] South African National Standard SANS 10142 – The Wiring of Premises.

#### [c] The National Building Regulations and Building Standards Act 1977 (Act 103 of 1977) as amended

#### [d] The Fire Brigade services Act 1993 Act 99 of 1987 as amended,

#### [e] The Electricity Act 1984 (Act 41 of 1984) as amended

#### [f] The Regulations of the local Gas Board where applicable.

#### [g] Any local bye laws

**2.4 Procurement of Electrical Packages**

This document pertains to the **Prime Rated Diesel Generator Plant sub contract.**

**2.5 Scope of Works included in the Prime Rated Diesel Generator Plant Contract**

* Prime Rated Generator Plant : 200kVA unit output at 400V/50 Hz at 0.85 Power Factor
* Control Panels
* Mains Failure sensing & control cabling
* Communication interface module
* Earthing
* Remote Alarm and Indication panel/s
* Fuel System and fuel Tank/s
* Exhaust and Silencer Systems
* Batteries and Battery Chargers
* Cooling System
* Heaters
* Louvres
* Sound Attenuators
* Signs, Notices and Labelling
* Painting of Equipment
* Workshop Drawings and Samples
* Provision of own Hoisting and Lifting
* Removal of own Waste
* Testing, Commissioning & Handover
* 12 months Free Maintenance and Services
* 12 months Guarantee

1. **BRIEF DESCRIPTION OF THE GENERATOR WORKS**
   1. **Overview**

The Prime Rated Generator Installation Works shall comprise the manufacture, works testing, supply and delivery to site, moving into position, erection, connecting up, site testing, witness testing, commissioning, demonstrating to the Employer and maintenance of the Installation as outlined in these specifications and drawings and Bill of Quantities.

A 200kVA, 400 V 50 Hz Prime Rated generator set shall be supplied and installed complete with the necessary control panels, wiring and interconnecting wiring.

The Prime Rated Generator plant supply shall give100% power back-up to the office building load which includes Lighting load, computer & other electronic load (via UPS units), Air conditioning and other mechanical load. The plant shall be installed in outside the office building as shown on the drawings.

* 1. **Associated Works by others**

The provision of the Automatic Changeover Switchgear and Cables between the Generator and the switchgear shall be by the Contractor.

* 1. **Builder’s Works**

The following civil works associated with the Generator works shall be carried out by the Generator Contractor:

* Laying of sleeves for cables
* Openings through structural elements/walls
* Lead cables at building entry/exit points
  1. **Contractor’s Drawings**

Contract Drawings

The Contract Drawings are listed in Schedule of Information in Section A.

**Contractors Installation Drawings**

The general requirements for installation drawings are set out in the Preliminary & General Conditions and shall be strictly adhered to. The Generator Contractor is reminded that he will be required to produce installation drawings prior to commencing any work or procurement of materials.

**Schematics & Details**

Full installation schematic drawings are required for the following systems:

* Generator Supply Reticulation showing full details including cable sizes, circuit breakers, isolators/fuse switches, etc.
* Details of co-ordination between all protective devices shall be submitted including graphical co-ordination plots on full scale log-log graph paper defining the types of protective device offered and giving tap, time dial and pick-up settings.
* Wiring Schematics

Coordinated details at a scale of no less than 1:20 shall be produced for all service intensive areas. The Generator Contractor is reminded that any clashes or unacceptable work caused by failure to detail part of the installation in this manner shall be rectified at his own expense.

Specific areas where details are suggested include:

* Fixing details of Equipment onto concrete bases

**Revisions & Updating Drawings**

It is the Generator Sub-Contractor’s responsibility to maintain his installation drawings up to date, incorporating all new information as it becomes available and agreed.

Minor design amendments will typically be issued in the form of sketches which the Generator Sub-Contractor will incorporate into his Installation Drawings and reissue.

**4 SERVICE CONDITIONS**

Altitude 480 meters

Peak Annual Average Temperature 30°C

Minimum 13°C

Vermin Proof All electrical equipment shall be vermin proof.

1. Manufacturer’s Recommendations

Certain items of equipment may carry particular requirements of the manufacturer or installer. Where this is the case, the manufacturers requirements shall be adhered to during all delivery, assembly, storage, installation and commissioning works.

1. electromagnetic interference

All equipment shall be immune from, and shall not radiate, signals exceeding the limits. The equipment shall be certified by SATRA to comply with EMC radio regulations made under Section 95 of the Telecommunications Act. For this purpose, the Contractor shall provide a complete test report / certificate of EMC from the SABS. If the equipment carries the CE mark the equipment will be accepted. The Engineer reserves the right to reject equipment found not to comply with the EMC standards or regulations .

**7 CONSTRUCTION PERIOD**

The construction period and programme will be provided by the Generator contractor.