South African Revenue Service

MAINTENANCE OF DIESEL GENERATORS FOR SARS

SOUTH AFRICAN REVENUE SERVICE – REQUIREMENTS AND SPECIFICATIONS

CONTENTS

1. EXECUTIVE SUMMARY

There is a need for South African Revenue Service (SARS) to have reliable back-up power supply to its facilities in case of utility power supply unavailability, SARS utilizes diesel generators to achieve this objective. There are two types of facilities occupied by SARS; those that are leased from landlords and those that are owned by SARS. The main objective of the requirements and specifications set out in this document is for SARS-owned facilities and those leased from State Owned Entities and Organs of State, however, it may be also required that the diesel generators in privately leased facilities be maintained by SARS' appointed service provider, thus the mandate set out in this document may be extended to accommodate this requirement. Therefore, the requirements and specifications in this document shall apply to either of the two above-mentioned facilities.

2. NORMATIVE REFERENCES

Generating Set Requirements for Inspection and Testing – Standard Operating Procedure xxx
SANS 8528, Reciprocating internal combustion engine driven alternating current generating sets – All Parts
SANS 60034-22, Rotating electrical machines Part 22: AC generators for reciprocating internal combustion (RIC) engine driven generating sets

3. DESCRIPTION OF THE WORKS

In the management of infrastructure, maintenance plays vital role, to ensure reliability, longevity, and return on investment on equipment procured. Maintenance on infrastructure is either planned (preventative) or unplanned (reactive), and in more critical infrastructure even predictive. The latter requires sophisticated installation that will allow for trending of equipment behaviour whose

data will be used to create patterns and trends that will allow for prediction of when equipment is likely to fail to intervene before the effect.

3.1 Generator Online Monitoring

The criticality of the reliability of back-up power supply at some of SARS' facilities requires that predictive maintenance be employed. This requires the installation of online monitoring on all diesel generators; this will be treated as a once off installation at the commencement of the appointed service provider's contract. The cost of such an installation shall be indicated as a separate line item on the service provider's pricing on the submitted bid document.

The online monitoring system shall be compatible, as far as possible, with the existing diesel generator electronic control units (ECU). SARS has two types of brands of ECUs currently installed on generators at its facilities; these are Deep Sea Electronics (DSE) and Lovato Electric (Lovato). It must be noted that some of these controllers are very old and may not be compatible with online monitoring technology and may need to be upgraded or modified.

The minimum requirements of the diesel generator online monitoring system are:

- The system shall have capability to collect and store real-time data which should be accessible via the internet or mobile and/or computer-based installed application
- The system shall be capable of sending out short message service (SMS) texts to alert predefined mobile numbers of certain alarm set points that are reached, e.g., fuel level below 60%, oil temperature above 80 deg. Celsius, etc. The appointed service provider shall be responsible to ensure that the system is registered with relevant authorities to allow for such communication, such as Independent Communications Authority of South Africa (ICASA)

- The system shall either be separately compatible with DSE and Lovato controllers or be one that is capable of integrating all signals from either onto one dashboard for ease of monitoring. The former (DSE) is preferred, however, where not possible, the latter (Levato) shall be considered
- The appointed service provider shall be responsible for full-time monitoring of the dashboard; SARS shall be given the same access to all signals being monitored on the same dashboard. Access rights for SARS shall be to dedicated individuals which shall be provided to the appointed service provider, provision shall be made for at least 8 licenses for SARS.
- The data collated via the online monitoring system shall also be used to implement predictive or preventative maintenance.

3.2 Planned and Corrective Maintenance

It is an inherent nature of maintenance of rotating machinery that there will be planned and unplanned activities. The implementation of predictive maintenance as per 3.1 above aims to also reduce the portion of unplanned maintenance or change what would be unplanned activities to planned ones.

The requirements attached as Annexure A shall be adhered to and used as a minimum guideline for planned maintenance and procurement of diesel generators for SARS, should the latter be so required. This will also help to guide the service provider on their pricing on the bid documents. The planned maintenance intervals or frequency is set out on the requirements (Annexure A) as well as on the Service Level Agreement (SLA). A draft SLA document is also attached as Annexure B of this document to give an indication of the requirements of the contract.

Unplanned maintenance shall comprise, as a minimum, of the following:

- Fault finding and resolution
- Repair and/or replacement of parts
- Drafting of scope of work for repairs and issuing of quotation or itemised bill of quantities for such works

Response times for unplanned maintenance are stipulated in the SLA document and shall be adhered to. Refer to Annexure C.

3.3 Replenishment of diesel

- Replenishing or refuelling of diesel is part of the scope of services for the appointed service provider. The price of fuel is not fixed; therefore this item cannot be included accurately on the service provider's pricing at bid submission stage. SARS shall pay for refuelling at market resale price at the time of requirement of such service, however, the bidder is expected to indicate AA rate per kilometre for transportation of fuel and a fixed rate per hour for the labour. A quotation shall be requested from the appointed service provider for refuelling, and this shall clearly indicate the fuel price as per the number of litres required, the travel time and rate per hour, and the rate (AA rate) per kilometre and distance to be travelled.

- Most of SARS facilities do not have on-site storage tanks for diesel nor bowsers; thus, the replenishment of diesel shall be required on an ad-hoc basis and at short-notice where necessary. The online monitoring system shall strategically allow for such short-notice occurrences to be averted and allow for better planning.

SARS reserves the right to use other channels to source fuel, should appointed bidder fail to deliver fuel on time, and charge back from the appointed bidder.

3.4 Emergency / Break Fixes repairs.

- Emergency repairs/Break fix will be attended to with urgency and within the stipulated Service level Agreement (SLA).
- Where parts for repairs are needed, all effort must be made to obtain the spares to affect the repairs to restore the Generator to be fully functional.
- Alternative arrangement is to be made by the appointed bidder (rental Generator and temporary installation) to keep the emergency power supplied to site if the repairs is going to take long, within the SLA time lines.
- All Emergency/Break Fix repairs must only be done once a quote for the repairs has been approved and a Purchase Order has been issued

3.5 Ad hoc Projects and Support:

- Where new Generators need to be procured, the Supplier will be required to submit quotes to SARS for the supply and installation of said Generators.
- Relocation of Generators will be included, and the suppliers will be required to submit quotes to affect this relocation.
- Where new installation is performed, a compulsory site visit will also be required to ensure that the installation will be done within all the stipulations of SANS 10142 and all relevant Local legislation.
- Where controllers must be replaced due to non-compatibility with the monitoring system, the Supplier will be required to submit quotes to replace the compatible controllers with the relevant DSE controllers.
- Where the Supplier cannot supply the necessary support to maintain the monitoring system, the current third-party vendor must be on-boarded to maintain, edit, and update the Monitoring system.

4. SAFETY HEALTH ENVIRONMENT AND QUALITY (SHEQ) REQUIREMENTS.

The bidder shall submit their company's SHEQ policy, plans, procedures, standards, etc.

4.1 Safety

Safety is of paramount importance at all SARS facilities, particularly when dealing with rotating machinery, it is therefore a requirement that a Safety File be submitted by the appointed service provider upon appointment.

4.2 Health

Health of SARS personnel, contractor's personnel, and SARS' clients are also paramount at all SARS facilities.

The appointed service shall:

- Ensure that there are no hazards that may be harmful to health when carrying out of works. If there is need for hazardous chemicals to be used, these shall be clearly communicated via signage, and must also form part of the risk assessment
- Diesel exhaust fumes can be harmful to health, therefore, the appointed service provider shall continuously check (either visual or using instruments) that there are no exhaust fumes that are directed towards occupied spaces. Generator exhaust pipes shall discharge safely away to prevent being carried into buildings, this should be at points where the fumes can be carried away via natural air draught.

4.3 Environment

The environment in and around the diesel generators shall be preserved at all times. The appointed service provider shall:

- Ensure that there are no diesel or oil spillages that affect the surrounding environment. If a spillage does happen, it shall be contained within the bund wall of the generator.

- Report any spillage that has impacted on the environment and carry out the clean-up operations
- Ensure that noise pollution is also addressed, where practical, and in line with the H & S requirement.
- Exhaust fumes from the generators must be in compliance with H & S requirement and the Local bylaws.

The appointed service provider shall perform assessments on the generator plants to identify any factors that may affect the environment and advise SARS accordingly.

Related to the sizes of the day tanks, external tanks might be required to be installed, above ground, where it is possible. This must be done in line with Local, Environmental and Fire regulations

4.4 Quality

To ensure that back-up power supply to SARS facilities is always reliable, any works that are carried out on the diesel generator plant shall be of high quality, whether in workmanship or the supply of replacement parts or fuel grade.

5. FOOTPRINT IN THE REGIONS

- The Supplier must have a footprint located in all the Regions.
- Where a footprint is not available in a region/s, a sub-contractor maybe used.
- When the tender is awarded to the winning bidder, a written agreement with the sub-contractor with an SLA must be supplied to SARS to ensure service delivery.

6. TYPES OF THE SARS BUILDINGS / FUNCTION:

- Head Office
- Office Campus
- Contact Centre
- Administration Office
- Revenue Office
- Customs Office
- Dog Units
- Port of Entry (Land Borders)
- State Warehouse
- Scanner Offices

7. SARS BUSINESS OPERATION HOURS.

- Normal working hours – 07h00 – 17h00 (Mondays to Fridays)
- After hours – 17h00 – 07h00 (Mondays to Fridays)
- Weekend Hours - Saturday – 24 hours
- Weekend Hours – Sunday and Public Holiday – 24 hours.

7.1 SARS Regions for the Bidders to respond.

The following table indicates the clustering of SARS regions and operational structures.

Each regional manager to manage the appointed bidder per each region.

Item	Description
Region - 1	Gauteng (GN & HO)
Region - 2	Gauteng Central & Gauteng South
Region - 3	Western Cape
Region - 4	Eastern Cape
Region - 5	Mpumalanga, Limpopo & Northwest
Region - 6	KwaZulu Natal
Region - 7	Free State & Northern Cape

8. ABBREVIATIONS

Abbreviation	Description
CRE	Corporate Real Estate
TS&D	Technology Service Delivery
SLA	Service Level Agreement
OEM	Original Equipment Manufacturer
SANS	South African National Standards
SARS	South African Revenue Service
SOP	Standard Operating Procedure

Annexure A – Frequency of Tests and Services

- Weekly Tests – Off Load: Duration: 10-15 minutes
    - Check Fuel levels
    - Engine temperatures
    - Starter Battery voltages
    - Remote starting of Generator via Monitoring system
    - Recording of all readings (Oil Pressure, Coolant Temperature, Charge Alternator Voltage)
    - Report back on possible issues

- Monthly Tests– On Load: Duration: 60 minutes
    - Check Fuel levels
    - Engine temperatures
    - Starter Battery voltages
    - Check Coolant levels
    - Switch off Mains and record start-up time and Change-over time
    - Record loads per phase
    - Record Frequency
    - Recording of all readings (Oil Pressure, Coolant Temperature, Charge Alternator Voltage)
    - Restore Mains and record cool-down period
    - Report back on possible issues

- Yearly Service – As per manufacture specifications
    - Change Oil
    - Change filters
    - Change Belts
    - Clean Radiator
    - Clean Engine
    - Top-up of Coolant
    - Perform a Test run to ensure there is no leaks and all levels are correct
    - Check Exhaust system for leaks and corrosion
    - Report back on condition of Generator and Environment

Annexure B – List of SARS Generators

The following is a list of generators that are installed on SARS facilities. This is included to give the bidder an idea of the types of generators with their respective sizes and capacity. The generator list may have changed by the time of the service provider's appointment; hence it is to be used as a guideline to inform the nature of generator sets that SARS requires services for.

REGION	BUILDING	Make/Size	TANK SIZE	ADDRESS	OWNER
EC	Port Elizabeth BO	Volvo 450 kVA	1000	Cnr St Mary's Terrace & Whytes Road	SARS - Full Service
EC	Mthatha	Volvo 500 kVA	1000	North Spar Complex, John Beer Road	SARS - Full Service
EC	Sanlam Building	Volvo 600 kVA	600	Chapel Street	SARS - Full Service
EC	Waverley	Volvo 600 kVA	1000	3-36 Phillip Frame Road, Chiselhurst	SARS - Full Service
EC	Qachas Nek	John Deere 200 kVA	500	Border Post	SARS - Full Service
FS	Kroonstad	Perkins 150 kVA	300	LMC Centre - 54 Hill St	SARS - Full Service
FS	Bloemfontein NCGB	Detroit 750 kVA	700	New Central Government Building -Cnr Aliwal & Nelson Mundela	SARS - Full Service
FS	Welkom	Perkins 500 kVA	1000	Cnr Tulbagh & Graaf Streets	SARS - Full Service
FS	Bethlehem	Inyata 100 kVA	200	32 Church Street	Landlord - Diesel only
FS	Bloemfontein Zastron	Stamford 670 kVA	1000	Cnr Zastron St & Kellner St	Landlord - Diesel only
GC	Krugersdorp		500	40 Kobie Krige Street	SARS - Full Service
GC	Rissik	Perkins 200 kVA	500	4 Rissik street, Johannesburg	SARS - Full Service
GC	Randburg	Volvo 600 kVA	1400	Cnr Hill & Kent Street, Randburg	SARS - Full Service

GC	Roodepoort		500	Horison View Shopping Centre	Landlord - Diesel only
GC	Woodmead - LBC		1000	Woodmead North Office Park, 54 Maxwell Drive, Jukskei View	Landlord - Diesel only
GN	Ashley Gardens	Volvo 300 kVA	300	46 Lebombo Road, Ashlea Gardens	SARS - Full Service
GN	Doornkloof B	Doosan 500 kVA	9000 + 1000	Protea Road, Doringkloof, Centurion	SARS - Full Service
GN	Doornkloof C	Doosan 300 kVA	9000 + 1000	Protea Road, Doringkloof, Centurion	SARS - Full Service
GN	Doornkloof A	Doosan 550 kVA	9000 + 1000	Protea Road, Doringkloof, Centurion	SARS - Full Service
GN	Khanyisa	Volvo 100 kVA	400	281 Middle Street, Brooklyn PTA	SARS - Full Service
GN	Pretoria ROR	Volvo 600 kVA	500	304 Lillian Ngoyi & Francis Baard Streets	SARS - Full Service
GN	Prospect House		600	304 Lillian Ngoyi & Francis Baard Streets	SARS - Full Service
GN	Silverton Warehouse		200	421 Rustic Road, Silvertondale PTA	SARS - Full Service
GN	Brooklyn Bridge	Doosan 600 kVA	800	570 Fehrsen Street, Brooklyn Bridge	SARS - Full Service
GN	Brooklyn Bridge	Doosan 600 kVA	800	570 Fehrsen Street, Brooklyn Bridge	SARS - Full Service
GN	Veale	Volvo 600 kVA	300	271 Veale Street, Brooklyn	SARS - Full Service
GS	Alberton BO	Perkins 200 kVA	500	49 Newquay Rd	SARS - Full Service
GS	Boksburg	John Deere 250 kVA	400	Atlas Road, Johannesburg	SARS - Full Service
GS	Nigel	Cummins 60 kVA	300	Cnr Hendrik Verwoerd & 4th Avenue	SARS - Full Service
GS	Springs	Perkins 200 kVA	500	Sanlam Building - 74 3rd Street	SARS - Full Service
GS	Vereeniging	Perkins 200 kVA	500	21 Merriman Avenue	SARS - Full Service
GS	Edenvale	Scania 400 kVA	500	74 Van Riebeek Ave and Hendrick Potgieter Street	SARS - Full Service
GS	ORT Scanner site		300	Voortrekker street, Kemptonpark	SARS - Full Service
GC	Kaserne SWH	AKSA 100 kVA	1300	No 1 Hour road, City Deep, Johannesburg	SARS - Full Service
GC	Soweto Bara	Perkins 200 kVA	300	Chris Hani Road, Orlando East Soweto	SARS - Full Service

KZN	Albany House	Perkins 800 kVA	900	61-62 Victoria Embankment	SARS - Full Service
KZN	Golela Border Post		1000	Border Post	Landlord - Diesel only
KZN	Pietermaritzburg	Perkins 300 kVA	300	9 Armitage Road, Bird Sanctuary	Landlord - Diesel only
KZN	Pinetown	Volvo 250 kVA	400	36 Kings Road	SARS - Full Service
KZN	Trescon	x 1000 kVA	18000	202 West Street	SARS - Full Service
KZN	uMhlanga		1000	29 Equinox Road	SARS - Full Service
KZN	Richards Bay BO	Volvo 300 kVA	300	Bay Side Mall	SARS - Full Service
KZN	Richards Bay Customs		200	105 Dollar drive Richards Bay	SARS - Full Service
KZN	Port Shepstone	Kirloskar 160 kVA	300	16 Bisset Street	SARS - Full Service
KZN	New Pier SWH		300	Entrance No 7, Langeberg Road, Durban Harbour	SARS - Full Service
KZN	Scanner site	FAW 160 kVA	300	Pier 1 Bayhead Road	SARS - Full Service
KZN	Customs House		400	Victoria Embankment	SARS - Full Service
KZN	New Castle	Volvo 350 kVA	1500	Victoria Mall, 36 Scott Street, Newcastle	SARS - Full Service
MP	Beit Bridge		700	Border Post	SARS - Full Service
LP	Giyani	Perkins 300 kVA	300	Government Building, Giyani	SARS - Full Service
LP	Lebowakgomo	Perkins 200 kVA	300	Old Government Building	SARS - Full Service
LP	Sibasa	Kirloskar 375 kVA	1000	756 P West Main Road	SARS - Full Service
MP	Lebombo		100	Lebombo Border Post	SARS - Full Service
MP	Nelspruit	Doosan 500 kVA	800	Plaston Rd, White River	Landlord - Diesel only
MP	Standerton	Perkins 100 kVA	1000	Cnr Princess & Kerk Streets	SARS - Full Service
MP	Witbank	Perkins 150 kVA	300	Cnr Botha Avenue & Paul Kruger Streets	SARS - Full Service
NW	Klerksdorp	Volvo 500 kVA	1000	18 Anderson Street	SARS - Full Service
NW	Mmabatho	Perkins 350 kVA	350	Cnr Batlhaping & Barokologadi Streets	SARS - Full Service

NW	Rustenburg	Volvo 300 kVA	1000	39 Heystek Street,	SARS - Full Service
NW	Pilanesberg		900	Pilanesberg Airport	SARS - Full Service
NC	Kimberley	Volvo 400 kVA	500	Toyota Building - Villiers & Alan st	SARS - Full Service
NC	Upington	Cummins 160 kVA	350	Anchorley Building,26 Avenue	SARS - Full Service
WC	Paarl	Perkins 250 kVA	250	19/20 Market Street, Paarl	SARS - Full Service
WC	Worcester	Perkins 150 kVA	300	59 Church Street	SARS - Full Service
WC	Lower Long BO	Scania 200 kVA	200	17 Lower Long Street	SARS - Full Service
WC	Beaufort West	Cummins 60 kVA	250	Church Street	SARS - Full Service
WC	Bellville	Scania 250 kVA	480	Cnr Durban and Voortrekker Rd	SARS - Full Service
WC	Bellville	Perkins 800 kVA	480	Cnr Durban and Voortrekker Rd	SARS - Full Service
WC	Bellville	Volvo 500 kVA	350	Cnr Durban and Voortrekker Rd	SARS - Full Service
WC	P166	Scania 400 kVA	800	22 Hans Strijdom Avenue	SARS - Full Service
WC	CT Scanner Centre	Perkins 150 kVA	1000	Duncan Road, Cape Town Harbour (Scanner)	SARS - Full Service
WC	George		700	1 Platinum Drive, Eden Park, George, 6529	Landlord - Diesel only

Annexure C - SLA

SLA		
Services Discipline	**Restoration/Supply**	
Refill of diesel	Less than 4 hours	Supply
Emergency break fix	Less than 6 hours	Repair
Plan Services	Less than 8 hours	Restore