

SPECIFICATION:

Servicing, maintenance, and Repairs of Standby Generators at Johannesburg Park Station

1. Scope Of Work

1.1. The scope of the work / services to be provided by the contractor is as follows:

- Carry out preventative maintenance and corrective maintenance or repairs of Generators as listed in this Specification.
- The scope also includes a 24hr, Monday to Sunday emergency service as and when required by PRASA-CRES.
- The contractor will ensure that the unit assigned to him/her works effectively and will point out all equipment defects to PRASA-CRES.

1.2. The contract duration will be for a period of 36 months.

1.3. The scope of work shall be Servicing, Repair & Maintenance of Generators listed in the BOQ below, and shall include but not limited to the following:

- Provision of Servicing, Repair and Maintenance services
- Installation of spare parts for Generators As and When recommended by the contractor during quarterly review of repair & maintenance of Generators.
- Minor Service: All inspections, replacements, and procedures to be done during the Minor Service shall be carried out quarterly or As and When need arises.
- Major Service: All inspections, replacements, and procedures to be done during the Major Service shall be carried out quarterly or As and When need arises

2. Definitions

2.1 *PRASA-CRES*: One of the divisions of Passenger Rail Agency of South Africa (PRASA) group responsible for managing the property portfolio of the group and the maintenance thereof.

2.2 *Facilities Manager*: A manager of PRASA-CRES responsible of building and infrastructure portfolio or any person authorised to act in that capacity.

2.3 *Normal Working Hours*: Hours of work as determined by a wage regulating measure or statutory enactment for any trade or activity, during which the basic minimum rate of pay is applicable and excludes all time for which a higher rate of pay is obligatory. Where no wage regulating measure is in force, the hours will be **07h00 to 17h00** Mondays to Fridays excluding a daily meal break.

2.4 *Contractor*: Successful tender who is appointed by PRASA-CRES and will be responsible to carry out the works as per this specification.

3. **Maintenance**

3.1. All planned work shall carried out during normal working hours at the cost tendered for in the Bill Of Quantities. Visits to the premises will be as scheduled for the contractor to carry out maintenance work as per the specification. Sites have visitors book which is to be properly completed by the Contractor on every visit and the reason for the visit recorded in the book.

3.2. The Contractor shall produce and issue to PRASA-CRES a written report or service sheet of any testing, inspection, examination, investigation and/or assessment undertaken and execution of any repairs by the Contractor. Reports will highlight

- the type of work or service done
- problems experienced
- results of inspection
- faults found and their priority thereof

Quotations for any corrective work required shall be submitted to PRASA-CRES and on the approval of such quotations the Contractor will correct or repair accordingly.

3.3. PRASA-CRES reserves the right to conduct an independent safety and quality audit to be carried out on the work completed by the contractor. The contractor shall provide his own quality controls to ensure compliance with the specifications and any changes to legislation or regulations applicable. Possible modernisation

products to upgrade or to improve the reliability and performance of the installation will be brought to PRASA-CRES for consideration.

4. Contract Performance

4.1. The contractor will sign a service level agreement with the PRASA-CRES. The performance of the Contractor will be discussed on the monthly basis at meetings scheduled to sit at PRASA CRES offices. Performance Items to be discussed will include:

- the number of breakdowns for specific period
- the turnaround time to attend to emergency callouts
- planned vs. actual progress
- submission of reports, invoices, and other administration duties
- payment of invoices

4.2. *Services Measure and Expectations*

Response Times for:

- Emergencies – within 3hrs
- Urgent - within 5hrs
- Non-Urgent - within 24hrs

5. General Information

5.1. The whole service shall be in accordance with the Occupational Health and Safety Act 85/1993 and all regulations framed shall be carried out to the satisfaction of PRASA CRES

5.2. The contractor shall be or have in his employment an accredited person. Proof must be supplied of the above requirements

5.3. The Contractor must have the capacity to be able to work on more than one site at any given time.

- 5.4. Where day to day repairs is to be undertaken, the Contractor shall first estimate the labor and material cost based on the schedule of prices, before proceeding with the job.
- 5.5. All material removed to be returned to PRASA-CRES unless otherwise stated.
- 5.6. Compliance certificates to be issued on completion of all new work done at no cost to PRASA-CRES. Compliance certificates required for existing installations to be priced out at the prescribed set rate.

6. **SAFETY AND PROVISION OF MATERIALS:**

- 6.1. The contractor is responsible for supply of all material required to repair the faults as per job cards /work order.
- 6.2. All material used shall be of high standard (SABS approved)
- 6.3. The material item price shall be based on standard market related plus the percentage mark-up fee.
- 6.4. PRASA Cres Maintenance Manager /Supervisor reserve the right to query price of any material that is on the material list. He /she may request that the contractor justifies a copy of the material purchased, invoices or actual quotes from reputable suppliers.

7. **Quality Of Work And Workmanship:**

- Works with poor workmanship will not be signed off and PRASA Cres reserve the right to hold payments until satisfied with the quality of the works.

8. **Non-Compliance:**

- **Safety** – the contractor will always ensure that work is performed in accordance with all the prescribed legal prescripts.
- **NB:** No work is to be done without approval of Safety File and valid signed site access certificate being issued to the contractor. No Contractor will be allowed on site without having attended the safety Induction training and proof is to be submitted to the Project Manager
- **Response time** – if an appointed service provider as per the General provisions of the As and When fails to adhere to the priority levels as prescribed PRASA CRES

Facilities department hereby reserves the right to penalise the service provider a penalty fee of 10% of the value of the work and if this provision is continually be violated the contract will be terminated.

- **Proof of Work done**> the contractor shall provide photos of before/during and after work completed with claim submitted. Photos can be submitted electronically.
- **Qualified personnel**- It is a requirement that personnel performing/overseeing works issued to the contractor be qualified in specific Trade.

9. **Safety Practices & Precautions**

9.1. General Safety.

9.1.1. It is everybody's responsibility to ensure that safety practices are adhered to the maximum to prevent personnel injury and equipment failure.

9.1.2. Safety Definitions and Requirements found in operation rules and procedures (OR&P) and operation maintenance manual (O&MM) are designed to provide valuable source for safety. Use them to prevent injuries and illnesses resulting from unsafe acts or unsafe conditions.

9.1.3. The service technician must understand the operation of the equipment and the safety measures required to service this equipment.

9.1.4. Do not work on any equipment unless you understand how the equipment functions and you have been informed of potential hazards.

9.1.5. Barricades are to be use around where a service will be performed.

10. **Maintenance References**

10.1. All electrical and mechanical work will be in accordance with the following publications

- For Hazardous locations all electrical equipment to be supplied and fitted according to SANS 10086-1, SANS 10086-3, SANS 10089-1, SANS 10089-2, SANS 10089-3, SANS 10108 and ARP 0108:2007 regulations and is subject to testing and final approval by PRASA's electrical department.

- E7/1 or E7/2, E4E Specifications
- No. R828 OHS Act 85 of 1993 as amended
- Applicable Municipal By-Laws and Regulations
- Electrical work completed to standard (SANS 10142)

11. Preventative Maintenance

- 11.1. The service provider shall perform maintenance and part replacement in accordance with the Maintenance Service Schedules for Generators contained in this document, below, to ensure continued operation of the organization and compliance with the maximum downtime for all systems or equipment.
- 11.2. The service provider shall report any trends detected that reflect system or equipment degradation, loss of performance, or frequency of failure to the PM.
- 11.3. The service provider shall arrange with the PM and obtain approval for date, time, and duration when equipment or systems shall be out of service for the purpose of performing preventive maintenance.
- 11.4. In the event of emergency repairs having to be carried out, the need for such repairs shall be reported immediately to the PM for further instructions.
- 11.5. The service provider shall furnish a report to the PM indicating the date and time of the failure, the reason for the failure, date, and time when corrective action was completed, details of corrective action taken, and results of any post maintenance testing performed to ensure satisfactory operation.
- 11.6. The service provider shall draw up the necessary Job Cards from the Maintenance Programme, or in response to emergency call outs, or equipment failure, and hand the completed cards to the PM for verification and acceptance that the work has been duly executed.
- 11.7. Obtaining and recording of quotations for materials or equipment, selecting the most competitive supplier, obtaining approval from the PM before placing orders.
- 11.8. Record complaints and faults with date, time and details and corrective action taken.
- 11.9. Provide and maintain an up-to-date equipment inventory.
- 11.10. All planned work will be carried out during normal working hours at the cost tendered for in the Bill of Quantities. Visits to the premises will be as scheduled for the contractor to carry work on the maintenance units as per this specification.

12. Terms Of Payment

12.1 The terms of payment will be monthly and upon receiving the invoice, PRASA-CRES shall pay the Contractor within 30 days. This is subject to the invoicing being both correct and free from anomalies.

12.2 All pricing information shall be exclusive of VAT.

12.3 No sub-contracting shall be permitted.

12.4 Invoices shall show the period, the lump sum for the maintenance work and the breakdown of all work for which the payment is being claimed for. All non-maintenance invoices shall be presented on a per maintenance unit basis and a fully itemized list of the work being charged for will be incorporated into the invoice. A photocopy of the worksheet which shall indicate entry and exit times from site which shall be signed by the PRASA-CRES representative shall be attached to the invoice and any invoices submitted without this attachment and fully completed to the satisfaction of the PRASA-CRES will be rejected.

12.5 Additional works shall be separately invoiced, and these shall be submitted monthly. Where such works are covered by the Schedules of Rates the schedules shall be strictly adhered to in preparing the invoice. Works authorized by PRASA-CRES representative which falls outside the scope of the contract and the Bill Of Quantities shall be invoiced separately and fully detailed with the works involved and cross referenced to the issued order number. PRASA-CRES reserves the right to request the invoice for the material or spare parts purchased by the Contractor on the works done.

12.6 If invoices are presented which do not fully comply with the format as detailed, they will be rejected. All invoices shall portray the identity number of the maintenance unit involved and site location and VAT as a sum of money shall be included within the total monies being claimed. A schedule of accumulative costs shall be submitted each month showing the expenditure to date of non-contract repair works and misuse / vandalism as two separate totals. PRASA-CRES will accept no liability and/or responsibility for the late payment of the invoices which have been incorrectly addressed by the Contractor.

12.7 No payment shall be made by PRASA-CRES for any unauthorized service performed by the Contractor.

13. **Pricing**

13.1 The Contractor shall familiarize himself/herself with the present conditions of the maintenance units and submit prices; accordingly, changes to the maintenance contract rates will not be accepted.

13.2 The Contractor shall include for all costs associated with the works for his use to include plant, tools, test equipment, chemicals, sundry materials; temporary lighting, small plant and tools; temporary plant and equipment to maintain operations in breakdowns; off-loading, hoisting and handling of all materials and plant; access to the works, administration and security; transport for staff; protecting the Works; safety, health and welfare of people; removing rubbish, protective casings and coverings away from the site and cleaning the works on completion; temporary screens, hoardings, guard rails, landing barriers, scaffolding and similar items; control of noise, pollution and all other statutory obligations; all necessary attendances in connection with examination and/or tests in compliance with OHS Act Regulations and all necessary management and supervision of the Works.

14. **Preventative Maintenance every three months (Shall include but not limited to the following) check, clean, repair or replace if necessary**

- **fan belt:** Check condition of fan belt, check tension of fan belt and adjust if necessary and check pulleys of fan belt
- Clean radiator air passage and check that the coolant is at the correct level
- Pressure Test Radiator
- Check that oil cooler air passage are clear- clean/replace if necessary
- Check alternator and fan belts
- Check all radiator hoses and clamps
- Check oil level of fuel pump cam box and governor, Drain and replace new engine oil if necessary

- Check fuel pump drive shaft and couplings
- Check oil levels and change oil if necessary
- Check fuel filters, primary fuel filters/water traps and replace if necessary
- Bleed fuel systems
- Replace air and oil filter
- Check engine crankcase breather
- Cooling system water temperature
- Fuel injectors and valves
- Cooling system coolant
- Cooling System Supplemental Coolant Additive (SCA) – Test and add
- Engine Air Cleaner Element (Dual Element) – Replace
- Engine Air Cleaner Element (Single Element) – Replace
- Change lubrication and cooling system
- All filters
- Check turbo for free rotation and bearing wear
- Check seal faces of elements, air cleaner hoses and clamps for dust ingress
- Fit new or clean air filters (washable air filters to be washed 3 times before discarding)
- Check jacket water heater is operating
- Check that all gauges are in position and secured
- Bearings
- Indicator lights, indicator lamps, gauges, switches, relays, contactors, solenoids, coils, voltage regulators, sensors, fuses, pressure sensing switches, transformers, power suppliers, battery cables and connections
- A.C wirings
- Check control panel
- Transfer panel
- Circuit breaker panel
- Check battery
- Check battery charger
- Check log volts and log amps
- Check battery water top up if necessary
- Check battery cable lugs, clean and tighten as required
- Start engine and run-on load for 20 minutes and record the following (**Obtain permission before proceeding**)
 - Check voltage
 - Check amperage

- Check Hz
- Check oil pressure
- Check water temperature
- Check oil temperature
- Listen for unusual noises
- Check for oil and water leaks and repair if necessary
- Check alternator coupling and terminals
- Blow dust out of alternator/generator
- Check all air vents on alternator/generator are clean and secured
- Check fuel tanks
 - Drain off water
 - Check level control switch
 - Check electric pump
 - Check hand pump
 - Check low fuel alarm
 - Check engine cut out alarm

NOTE: REPORT FOR PREVENTATIVE MAINTENANCE SCHEDULED WORK MUST BE SUBMITTED TO THE PROJECT MANAGER FOR APPROVAL

15. Pricing

Material list rates (Rates to include testing and commissioning)

ITEM	DESCRIPTION	UNIT	YR 1- RATES (excl vat)	YR 2- RATES (excl vat)	YR 3- RATES (excl vat)
1.0	1000 KVA FIXED STANDBY 3 PHASE GENERATOR Brand - Cummins Diesel tank Capacity- 1000 L				
1.1	150mm2 4 core ECC cable	M			
1.2	Fasteners	Ea			
1.3	Plugs	Ea.			
1.4	Injector	M			
1.5	Oil filter	Ea			
1.6	Generator valve	Each			
1.7	Piston pin	Ea			
1.8	Valve collector	Ea			
1.9	Cylinder liner	Ea			
1.10	Valve seat	Ea			
1.11	Water horse	M			
1.12	Alternator	Ea			
1.13	Bearing	Ea			
1.14	Exhaust pipe	Ea			
1.15	Electric starter	Ea			
1.16	Fuel tank	Ea			
1.17	Control door	Ea.			
1.18	Primary filter	Ea.			
1.19	Secondary filter	Ea.			
1.20	Breaker	Ea.			
1.21	Hoses and Clamps	Ea.			
1.22	Fan Belt	Ea.			
1.23	24V Battery	Ea.			
1.24	Oil pump	Ea.			
1.25	Air filter	Ea.			
1.26	Fuel filter	Ea.			
1.27	Radiator	Ea.			
1.28	Fan	Ea.			

1.29	Recirculating pumps	Ea.			
1.30	Thermostat	Ea.			
2.0	250 KVA FIXED STANDBY 3 PHASE GENERATOR Brand- Volvo Diesel tank Capacity- 200 L				
2.1	70mm2 4 core ECC cable	M			
2.2	Fasteners	Ea			
2.3	Plugs	Ea.			
2.4	Injector	Ea			
2.5	Oil filter	Ea			
2.6	Generator valve	Ea			
2.7	Piston pin	Ea			
2.8	Valve collector	Ea			
2.9	Cylinder liner	Ea			
2.10	Valve seat	Ea			
2.11	Water horse	M			
2.12	Alternator	Ea			
2.13	Bearing	Ea			
2.14	Exhaust pipe	Ea			
2.15	Electric starter	Ea			
2.16	Fuel tank	Ea			
2.17	Control door	Ea.			
2.18	Primary filter	Ea.			
2.19	Secondary filter	Ea.			
2.20	Breaker	Ea.			
2.21	Hoses and Clamps	Ea.			
2.22	Fan Belt	Ea.			
2.23	12V Battery	Ea.			
2.24	Oil pump	Ea.			
2.25	Air filter	Ea.			
2.26	Fuel filter	Ea.			
2.27	Radiator	Ea.			
2.28	Fan	Ea.			
2.29	Recirculating pumps	Ea.			
2.30	Thermostat	Ea.			

Labour, Transport and Mark-Up Price Schedule Against Estimated Quantity – Standby Generators

Item	Description		Unit	Annual Estimated Quantity	Year 1 Rates		Year 2 Rates		Year 3 Rates	
					Rate (Excl. VAT)	Amount (Excl. VAT)	Rate (Excl. VAT)	Amount (Excl. VAT)	Rate (Excl. VAT)	Amount (Excl. VAT)
1	Provisional Sum (Material/Equipment)	Material	Sum	Value/Amount	R 100 000 .00	R 100 000.00	R 100 000 .00	R 100 000.00	R 100 00 0.00	R 100 000.00
2	Percentage mark-up for materials/equipment that are not listed	Material	%	R 100 000.00	%	R	%	R	%	R
3	The Service Provider is to tender their total cost per hour on site per qualified Artisan and an assistant to perform service and repairs during Normal working hours (07:00 – 17:00) . This cost shall exclude material, which has previously been dealt with in this schedule.	Artisan	Rate/hour	500 hours	R	R	R	R	R	R
4		General Worker	Rate/hour	500 hours	R	R	R	R	R	R
5	The Service Provider is to tender their total cost per hour on site per qualified Artisan and an assistant to perform service and repairs during After working hours and Saturdays (17:00 – 07:00) . This cost shall exclude material, which has previously been dealt with in this schedule.	Artisan	Rate/hour	25 hours	R	R	R	R	R	R
6		General Worker	Rate/hour	25 hours	R	R	R	R	R	R
7	The Service Provider is to tender their total cost per hour on site per qualified Artisan and an assistant to perform service and repairs during Sunday and Public Holiday . This cost shall exclude	Artisan	Rate/hour	25 hours	R	R	R	R	R	R
8		General Worker	Rate/hour	25 hours	R	R	R	R	R	R

	material, which has previously been dealt with in this contract									
9	Travel cost		Rate/ km	5000 kilometers	R	R	R	R	R	R
10	Provision of a Safety file	Sum	Value/Amount	R 6000.00	R 6000.00	R 6000.00	R 6000.00	R 6000.00	R 6000.00	R 6000.00
				Totals:		R		R		R
				Vat (15%)		R		R		R
				Total Incl vat		R		R		R