

ANNEXURE C3.2: Scope of Work

2.1 TECHNICAL SPECIFICATIONS

MAINTENANCE AND REPAIRS OF THE FOLLOWING GENERATOR SETS (12 month period):
This will require 3 services and 1 major service per year for the 12 month period.

- (1) 500KVA Volvo diesel generator at Analytical Services (2016050924)
- (2) 400KVA Volvo Penta – at Process Technology (5301072158)
- (3) 450KVA Volvo diesel generator at Reitvlei (RV + 01BMA)
- (4) 500KVA Volvo diesel generator at Reitvlei (RV + 02BMA)
- (5) 68 KVA diesel generator at Reitvlei (RV + 01BRA)

NB. The rates for the service as stipulated shall include labor, transport, and cleaning of the plant room, which shall form part of the quarterly services.

The Supplier to notify Facilities management 3 days before intended servicing and to report to the officer in charge on arrival and departure, complete service schedule and obtain signature from RW Officials.

The following items must be attended during each SERVICES (3 times a year) of all generator sets:

- Check that intercooler is free from obstacles
- Service air cleaner and filter (oil bath type)
- Check air cleaner ducts, hoses, clips etc. for serviceability and tighten as necessary
- Check intake ducting for obstruction
- Change oil and fuel leaks
- Change all elements
- Check coolant hoses and clips for serviceability and tighten as necessary
- Change oil and fuel filters and pre-fuel filters and check for leaks
- Tension all V – belts, checking same for ageing and replace defective v belts, Twin v belts should only be replaced in pairs and must be re-tensioned after 30 - 60 minutes of operation.
- Check exhaust system for damages or leaks.
- Check for oil and fuel leaks
- Check operation of oil pressure and temperature gauges – replace where necessary
- Check operation of visco fan (if fitted)
- Check and clean battery terminals
- Check battery electrolyte level, replenish if necessary
- Check exhaust system for damage or leaks, replace / repair where necessary
- Check and where required replace socket on oil filter housing and socket on fuel and pre-fuel filters housing.
- Check Turbo for possible oil leaks and repair if required.
- Cooling system to be checked, tested and where required repaired/replaced.
- Check for any possible loose wires that may need to be repaired or that may need to be

“covered”.

- Check that the heat exchanger is functional. If not function
- 100% then it should be replaced.
- Check that the generator shuts down when on test mode without having to manually stop it. If not repair. This may involve checking for contacts relay and solenoid may need replacing.
- Any other appropriate repairs and maintenance to ensure smooth and safe running of the generator

The following items must be attended during each MAJOR SERVICES (once a year) of all generator sets:

Change water in the radiator and add antifreeze

Change air filter

Check all air cleaner ducts, hoses, clips, etc for service ability and repair where necessary

Check intake during the obstructions

Check coolant hoses and clps for serviceability and tighten as necessary

Tension all V – belts, checking same for ageing and replace defective v belts, Twin v belts should only be replaced in pairs and must be retention after 30 - 60 minutes of operation.

Change diesel filter

Change all elements

Drain and clean fuel sediment trap

Check all control linkages for correct function and adjustment and lubrication all joints – replace Where necessary

Check operation of oil pressure and temperature gauges – replace where necessary

Check operation of visco fan (if fitted)

Check and clean battery terminals

Check battery electrolyte level, replenish if necessary

Change oil and seal leaks

Check exhaust system for damage or leaks, replace / repair where necessary

Check water tank cap and if leaking or damaged, to replace.

Check radiator hoses for leaks and damage and replace.

All oil and oil filters must be disposed of via an oil recycling organization. Proof of safe disposal is required. Proof of safe disposal of all other warn and discarded parts must be provided.

NB

With each invoice for work (including call outs) must also include a full report on work undertaken and to be completed in the next service to ensure compliance and accountability.

This must be signed of by a competent and qualified person.

Any other appropriate repairs and maintenance to ensure smooth and safe running of the generator

2.2 MAINTENANCE AND REPAIRS OF THE FOLLOWING UPS'S

- (1) 3 x 100 KVA DS300 Series Tescon - Analytical Service (173100D0004) (173100D0024) (173100D0025)
- (2) 1 x 30KVA Tescon – at Process Technology (11002188224886225000002)
- (3) 1 x 80KVA Powerwise 3/3 - Reitvlei (L00282639 A 6784800)
- (4) 1 x MLA 60KVA Master - Reitvlei basement (7852PFC)
- (5) 1 x MLA 60KVA Master - Reitvlei basement parking (7852PFC)
- (6) 1 x 80KVA Aros - Reitvlei Server room (LZ17UP710640001)
- (7) 1 x 80KVA Aros - Rietvlei Server Room Substation (LZ17UP710640002)
- (8) 1 x 80KVA Aros - Rietvlei Server Room Substation (LZ17UP710640003)
- (9) 1 x 80KVA Aros - Rietvlei Substation 1 (MAT00444P436870001)
- (10) 1 x 80KVA Elen - Rietvlei Substation 1 (11A003126)
- (11) 2 60KVA MLA - Basement parking

NB. The rates for the service as stipulated shall include labor, transport and cleaning of the plant room, which shall form part of the quarterly services.

The Supplier to report to the officer in charge on arrival and departure, complete service schedule and obtain signature from RW Officials.

The following items must be attended during each service (twice a year, 6 months apart) for all UPS sets:

- Verify that the equipment is within specified conditions.
- Review where applicable, the equipment event log for any alarm in evidence and record such.
- Check all power terminals of equipment under load.
- Check any/all remaining terminations not reviewed previously.
- Undertake a physical check of all terminal temperatures of either internal or external batteries.
- Transfer the load to manual bypass.
- Carry an active alarm debugging re-initialization
- Verify proper transfer of equipment to battery operation.
- Conduct testing of internal static bypass where applicable.
- Conduct an inspection of all capacitor banks for damage.
- Ensure that all internal control and power wiring is properly seated and free of damage.
- Where applicable ensure appropriate torque of all internal power connections.
- Perform display self-test & mains simulation test via display.
- Clean UPS and batteries
- Conduct and report on UPS room environment.

NB: The Assessment and lifespan report should accompany the service report must be after each service for all units.

2.3 AD HOC REPAIRS

The contractor is required to have a 24/365 call out facility. The maximum response time which the contractor must respond shall be less than 30 minutes. The contractor shall ensure that standby arrangements for emergency call outs are at all times in place with contact details of the technicians on standby.

All ad hoc and miscellaneous repairs in this BID will be treated as “as and when” the service is needed. The contractor will not be entitled to claim any of the amounts listed in ad hoc repairs unless work has been carried out. Such work must be first be requested by Rand Water official and the reference number quoted in all job cards.

PREAMBLE TO THE SCHEDULE OF QUANTITIES AND RATES

- a) The Standard Commercial Terms and Conditions, The Special Commercial Terms and Conditions, the Specifications (including the Project Specification), and any Drawings are to be read in conjunction with the Schedule of Quantities and Rates.
- b) The Schedule comprises items covering the Service Provider's profit and costs of general liabilities and of the design, manufacture, supply, installation and commissioning of temporary and permanent Works. The Proposer is at liberty to insert a rate of his own choosing for each item in the Schedule and any item against which no quantity (where applicable) or rate is entered will be considered to be covered by other items in the Schedule.
- c) The quantities and rates inserted in the Schedule are to be inclusive prices to the Employer for the work described under the several items. Such prices shall cover all costs and expenses that may be required in and for the Works, and shall cover the cost of all general risks, liabilities, and obligations set forth or implied in the documents on which the Tender is based. All rates and amount shall be nett, exclusive of Value Added Tax (VAT) and shall be carried to the summary page in their nett form. VAT will then be calculated on the total of the nett amounts.
- d) All quantities and rates as set forth and inserted in the Schedule and extended to the totals for each portion of the Schedule, shall be considered as being totally inclusive for the whole of the Works as stipulated, or as can reasonably be inferred from these Documents.
- e) All product guarantees are deemed to be included in the rates, and installation and application rates will include all necessary inspections and approvals to maintain guarantees.
- f) “Complete” as it is used in the Schedule means the complete system or unit as specified in the documents.
- g) Each item in the Schedule, which is priced, shall be filled in black ink.
- h) All quantities shall be considered as final and sufficient for the work described. The Proposer shall satisfy himself as to the sufficiency of quantities but may not change

quantities. Quantities shall be re-measured, and payment shall be made according to the adjusted total only.

- i) In case of arithmetical errors in the multiplication of rates and quantities in the Proposal, the amount shall not be changed. In case of incorrect summation of amounts in the Proposal, the Lump Sum total shall remain fixed.

2.3 HEALTH AND SAFETY

Safety during construction is paramount, and the Contractor must adhere to the statutory construction regulations and other regulatory requirements.

The following serves as a guideline to the access and safety scaffolding:

- The successful bidder will be expected to submit the SHE file after the the work has been awarded and accepted. Site hand over van only be scheduled after induction has been concluded.
- **Work platforms:** Adequate and secure work platforms from which to carry out the work are required where necessary.
- **Fall mitigation:** Providing adequate platforms and edge protection may not always be possible or reasonably practicable. If so, safety nets, soft landing systems, or other measures may be necessary to minimize the consequences of any potential injury. If nets are used it must be properly installed by competent riggers as close under the work surface as possible to minimize the distance fallen.
- **Falling material:** A tidy site must be maintained to prevent material which could fall from accumulating. Material may never be thrown from a roof or scaffold, and enclosed rubbish chutes are to be used if lowering material to the ground in containers is not possible. Rubbish chutes must discharge into skips to dispose of spoil material to spoil level.
- Public safety must be maintained throughout, and all scaffolding and pedestrian walkways must be barricaded to prevent accidental or unauthorized access. Where necessary, the contractor must obtain permission from council to barricade sidewalks.