



TECHNICAL SPECIFICATION

TITLE: PURCHASE OF ONE (1) SET BRAND NEW SILENT TYPE 250KVA STANDBY POWERED GENERATING SET COMPLETE WITH ACCESSORIES

1.0 GENERAL SCOPE

The scope of work shall be supply, delivery, testing, and commissioning of one (1) unit 250KVA Brand New Standby Power Generating Set (Silent type) to General Santos City Water District.

The delivery period shall be within one hundred twenty (120) calendar days inclusive of commissioning and field testing.

2.0 APPLICATION

The unit is capable to operate up to 125 horsepower submersible motor, 460 Volts, 3- phase, 60Hz and serve as standby power during commercial power interruption at Pumping Station no. 22 (Purok Cabuay, Sinawal) to ensure continuous supply of potable water to the consumers.

3.0 GENERAL SPECIFICATIONS

3.1. ENGINE

| Particulars | Requirement | Statement of Compliance |
|--------------------|-------------------------------------|--------------------------------|
| Configuration | 4 cycle; in-line; 6 cylinder diesel | |



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| Aspiration | Turbo charged and after cooled | |
| Rated Speed, rpm | 1800 | |
| Speed droop | 5% | |
| Over speed limit, rpm | 2200±50 | |
| Starting voltage | 12 Volts DC | |

3.2. ALTERNATOR

| Particulars | Requirement | Statement of Compliance |
|---------------------------|----------------------------------|-------------------------|
| Frequency & Speed | 60Hz/1800rpm | |
| Insulation System | Class H/4 POLES | |
| Rated Power Factor | 0.8 | |
| Voltage Regulation | ± 5% | |
| Full Load Current | ≥313 Amperes @ 460V | |
| Excitation | SELF EXCITATION | |
| Stator Winding | 2/3 | |
| Exciter voltage regulator | Permanent Magnet Generator (PMG) | |

3.3. FUEL CONSUMPTION

| Particulars | Requirement | Statement of Compliance |
|-------------|----------------|-------------------------|
| 100% Load | ≤50 Liters/hr | |
| 75% Load | ≤38 Liters /hr | |
| 50% Load | ≤26 Liters /hr | |
| 25% Load | ≤15 Liters /hr | |

3.4 ELECTRICAL SYSTEM

| Particulars | Requirement | Statement of Compliance |
|--------------|-------------|-------------------------|
| Voltage | 460-480 V | |
| Power Factor | 0.8 | |



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|-----------|-------|--|
| Phase | 3 | |
| Frequency | 60 Hz | |

3.5. **SOUNDPROOF ENCLOSURE**

It should be Factory Assembled Soundproof Enclosure with 90db.

3.6. **GENERATING SET CONTROL MODULE FEATURES**

Control System comprises of:

| Particulars | Statement of Compliance |
|--|--------------------------------|
| Protection and control of a diesel engine. | |
| Three-phase AC voltage measuring circuit. | |
| Equipped with an LCD display presenting all values and alarms. | |
| Automatic engine start/stop. | |
| Engine protection. | |
| Breaker control. | |
| Generator protection. | |
| Digital governing and generator set protective functions. | |
| Singlephasefull wave SCR type regulator compatible with either shunt or PMG systems. | |

3.6.1 **STANDARD FUNCTION**

| Particulars | Statement of Compliance |
|----------------------|--------------------------------|
| Engine Control | |
| Generator Monitoring | |
| Generator Protection | |



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| Engine Monitoring | |
| Clear Text Display | |

3.6.2 SHUTDOWN FUNCTION

| Particulars | Statement of Compliance |
|------------------------------------|--------------------------------|
| Loss of Speed Signal | |
| Alternator Under / Over Voltage | |
| Alternator Under/ Over Frequency | |
| Mains Under / Over Voltage | |
| Mains Under/ Over Frequency | |
| Under / Over Speed | |
| Low Oil Pressure | |
| High Engine Temperature | |
| Phase Sequence Electrical (Option) | |
| Earth Fault (Option) | |

3.6.3 WARNING FUNCTION

| Particulars | Statement of Compliance |
|-----------------------------------|--------------------------------|
| Alternator Under / Over Voltage | |
| Alternator Under/ Over Frequency | |
| Mains Under / Over Voltage | |
| Mains Under/ Over Frequency | |
| Under / Over Speed | |
| Low Oil Pressure Pre-Alarm | |
| High Engine Temperature Pre-Alarm | |
| High/Low Battery Voltage | |



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|----------------------|--|
| Over-current | |
| Periodic maintenance | |

4.0 SPECIAL PROVISION

| No. | Particulars | Statement of Compliance |
|-----|--|-------------------------|
| 1 | Furnished spare parts as recommended by manufacturer for one-year operation. | |
| 2 | Two copies of the list of recommended spare parts for one year trouble-free operation. | |
| 3 | One (1) complete set of special tools required for maintenance of generator set. Special tools are those which solely the manufacturer provides for special purposes, or otherwise, to reach inaccessible parts. Supply tools complete with suitable tool box. | |
| 4 | Two (2) complete sets of filters (Air, Fuel, Water, & Lube). Supply filters in suitable storage box. | |
| 5 | Two copies of operation and maintenance manual outlining step-by-step procedures required for system start-up, operation and shutdown. Manual shall include manufacturer/supplier's name, address, local telephone number, model number, and description of equipment complete with basic operating features. | |
| 6 | Two copies of Maintenance Manual listing routine maintenance procedures and troubleshooting guides listing possible breakdowns and repairs for each piece of equipment. Manual shall include factory service manuals, complete parts lists, simplified schematic diagrams of each system as installed, and originals from which posted instructions were made. | |
| 7 | As part of GSCWD safety and health policy, the winning bidder is required to provide Two (2) Sets of hearing protector and two (2) sets of safety | |



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| | goggles to be used by the pumping operator during power failure. | |
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5.0 TERMS AND CONDITIONS

| No. | Particulars | Statement of Compliance |
|-----|--|-------------------------|
| 1 | The scope of supply shall be Brand new diesel generating set, built to either UL/NEMA standard. All materials and parts comprising units herein specified shall be new and unused, of current manufactured, and of highest grade. | |
| 2 | Generator set shall have a built-in fuel tank rated to operate for 8 hrs. | |
| 3 | The supplier shall have at least five (5) year record in supplying machineries and equipment. | |
| 4 | Previous supplier shall have complied with all warranty claims and shall have no pending warranty obligations with the district. | |
| 5 | The supplier shall have its own service center within Mindanao area and technicians must be available on call 24/7 and a commitment of 48 hours response time, in case of breakdown of the unit during the warranty period. | |
| 6 | The brand new standby power diesel generator set supply includes testing and commissioning. | |
| 7 | Commissioning shall include fuel for eight (8) hours continuous running with load and shall be supplied by the winning bidder. | |
| 8 | The winning bidder shall provide One (1) year or 200 running hours warranty whichever comes first for the generating set and all accessories. Warranty period shall commence on the date of final acceptance of equipment following the submission of final field test and satisfactory results. | |
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| 9 | Change oil and filters shall be done by the qualified technicians of the winning bidder and is free of charge on the first 50 running hours or 6 months and 250 running hours or 1 year whichever comes first. Consumables like Lubricating oil shall be provided by the winning bidder. | |
| 10 | The winning bidder shall provide technical brochure, electrical wiring and control diagram and technical orientation to General Santos City Water District equipment personnel. | |

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