



TECHNICAL SPECIFICATION

TITLE: PURCHASE OF BRAND NEW SILENT TYPE 275KVA PRIME POWERED GENERATING SET WITH COMPLETE ACCESSORIES

1.0 GENERAL SCOPE

The scope of work shall be supply, delivery, testing, and commissioning 275kVA Brand New Prime Power Generating Set 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 275kVA Genset unit must be capable of operating up to 150 horsepower submersible motor, 460 volts, 3-phase, 60 Hz and serve as prime power during commercial power interruptions, ensuring uninterrupted delivery of potable water to consumers.

3.0 GENERAL SPECIFICATIONS

3.1. ENGINE

Particulars	Requirement	Statement of Compliance
Configuration	4 cycle; in-line; 6 cylinder diesel	
Aspiration	Turbocharged and Charge Air Cooled	
Rated Speed, rpm	1800	
Speed droop	5%	
Over speed limit, rpm	2200±50	
Starting voltage	12/24 Volts DC	



3.2. ALTERNATOR

Particulars	Requirement	Statement of Compliance
Frequency & Speed	60Hz/1800rpm	
Insulation System	Class H	
Rated Power Factor	0.8	
Voltage Regulation	± 1%	
Excitation	SELF EXCITATION	
Stator Winding	2/3	
Exciter voltage regulator	Brushless	

3.3. FUEL CONSUMPTION

Particulars	Requirement	Statement of Compliance
100% Load	62 Liters/hr	
75% Load	46 Liters /hr	
50% Load	31 Liters /hr	
25% Load	18 Liters /hr	

3.4 ELECTRICAL SYSTEM

Particulars	Requirement	Statement of Compliance
Voltage	460-480 V	
Power Factor	0.8	
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.	
Single phase full 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	
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	
Over-current	
Periodic maintenance	

3.6.4 Mobile Control and Monitoring

Particulars	Statement of Compliance
Fuel Level	
Engine Temperature	
Oil Pressure and Temperature	
Battery Voltage	
Genset Turning On and Shutting Down	
Power Consumption	
Voltage, Amperage, Frequency, RPM	
Single phasing	
Total Running Time	
Total Start Count	



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 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 goggles to be used by the pumping operator during power failure.	

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	<p>The winning bidder together with GSCWD representative will conduct load bank test for six (6) hours per generator set prior to delivery of the units. Test shall be as follows;</p> <p style="margin-left: 40px;"> 1 hour – 25% load 1 hour – 50% Load 4 hours – 75% Load </p> <p>During the test, the fuel consumption should correspond to the values specified in the table provided in item No.3.3. This ensures that the unit meets the required performance standards and fuel efficiency expectations. The result shall be the basis for the Generator Set to PASS or FAIL in the accuracy test. Max permitted error is +10%.</p>	
8	Laboratory testing shall be witnessed by three (3) GSCWD representatives together with the winning bidder's representatives for three (3) days. All relevant and incidental cost (Testing fee, transportation, accommodation, allowances and etc.) in the testing of the equipment shall be shouldered by the winning bidder.	
9	In case the unit/units failed to pass the minimum requirements during laboratory testing, the winning bidder shall make appropriate adjustment to comply with the set specifications without cost to GSCWD during commissioning.	
10	Commissioning shall include fuel for four (4) hours continuous running with load and shall be supplied by the winning bidder. The winning bidder shall be required to send a technician responsible of commissioning. All relevant and incidental cost (transportation, accommodation, allowances and etc.) in the commissioning of the equipment shall be shouldered by the winning bidder.	



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11	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.	
12	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.	
13	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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