



TECHNICAL SPECIFICATION

TITLE: PURCHASE OF ONE (1) SET BRAND NEW SILENT TYPE 60KVA STANDBY POWERED GENERATING SET WITH COMPLETE ACCESSORIES

1.0 GENERAL SCOPE

The scope of work shall be supply, delivery, testing, and commissioning of one (1) unit 60kVA 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 60kVA unit must be able to support the electrical loads of the warehouse, motor pool, and water meter room, operating at 230 volts, single phase, 60 Hz. It should also function as an automatic transfer during commercial power outages and vice versa, ensuring an uninterrupted power supply.

3.0 GENERAL SPECIFICATIONS

3.1. ENGINE

Particulars	Requirement	Statement of Compliance
Configuration	4 cycle; in-line; 6 cylinder diesel	
Aspiration	Turbo charged and after 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/4 POLES	
Rated Power Factor	0.8	
Voltage Regulation	± 1%	
Excitation	SELF EXCITATION	
Stator Winding	2/3	
Exciter voltage regulator	Brushless	

3.3. FUEL CONSUMPTION (60kVA)

Particulars	Requirement	Statement of Compliance
75% Load	11 Liters /hr	
50% Load	8 Liters /hr	
25% Load	4 Liters /hr	

3.4 ELECTRICAL SYSTEM (60kVA)

Particulars	Requirement	Statement of Compliance
Voltage	220 Vac	
Full load Ampere Rating	273Amps @ 220Vac	
Phase	1	
Frequency	60 Hz	



3.5 ATS Technical Specification

Item	Technical Specification	Statement of Compliance
1	Pre-wired Automatic Transfer Switch Panel complete with powder coated wall mounted enclosure, dead-front breaker compartment and swing type front door, door mounted accessories and with following major components below.	
2	Electrically operated Molded Case Circuit breaker rated 2x300A, 3P, 60Hz, 35kAIC, 460V.	
3	ATS Digital Controller, door mounted, LED display with manual and remote functions.	
4	Digital multi-function power meter with dual source for utility & generator.	
5	Ring type current transformers.	
6	Copper busbar @100% rated capacity including ground bus	
7	Complete controller accessories with interlink to generator controller for remote start.	
8	Electrically and mechanically interlocked to prevent simultaneous connection of both power sources. Automatic transfer from utility to generator power and vice versa without manual intervention.	

3.6 Technical Parameters of ATS Controller

Item No.	Technical Specification	Statement of Compliance
1	Display LCD(240*128)	
2	DC Supply DC(8~35)V	
3	Operating Temp. (-25~+70)°C	
4	Working Humidity (20~93)%RH	
5	AC Voltage Input: 3P3W (L-L) (80~625)V	
6	Programmable Input 8	
7	Programmable Output 12	
8	Alternator Frequency 50/60Hz	



9	Programmable Interface USB/RS485-1/RS485-2	
10	Voltage, Current and Power Display	
11	Over/under voltage, over/under frequency, over current, loss of phase, phase sequence wrong protection;	
12	All parameters can be set on site	
13	Automatic/Manual mode. In manual mode, can force the switch to close or open	

3.6. SOUNDPROOF ENCLOSURE

It should be Factory Assembled Soundproof Enclosure with 90db.

3.7. 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.	

3.7.1 STANDARD FUNCTION

Particulars	Statement of Compliance
Engine Control	
Generator Monitoring	



Generator Protection	
Engine Monitoring	
Clear Text Display	

3.7.2 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)	

3.7.3 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	



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 prior to delivery of the units. Test shall be as follows;</p> <p style="padding-left: 40px;">1 hour – 25% load 1 hour – 50% Load 4 hours – % 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.	
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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