



## **TECHNICAL SPECIFICATION**

### **TITLE: PURCHASE OF TWO (2) SETS BRAND NEW SILENT TYPE STANDBY POWERED GENERATING SET COMPLETE WITH ACCESSORIES**

#### **1.0 GENERAL SCOPE**

The scope of work shall be supply, delivery, testing, and commissioning of two (2) units Brand New Standby Power Generating Set (Silent type) 250KVA and 220KVA 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 units are 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. 24 (CSWDO Fatima) and capable to operate up to 100 horsepower submersible motor, 460 Volts, 3- phase, 60Hz and serve as standby power during commercial power interruption at Pumping Station no. 25 (Conel lot) to ensure continuous supply of potable water to the consumers.

#### **3.0 GENERAL SPECIFICATIONS**

##### **3.1. ENGINE**

<b>Particulars</b>	<b>Requirement</b>	<b>Statement of Compliance</b>
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	± 5%	
Full Load Current (250KVA)	≥313 Amperes @ 460V	
Full Load Current (220KVA)	≥276 Amperes @ 460V	
Excitation	SELF EXCITATION	
Stator Winding	2/3	
Exciter voltage regulator	Brushless	

### 3.3. FUEL CONSUMPTION

Particulars	Requirement	Statement of Compliance
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	
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:

<b>Particulars</b>	<b>Statement of Compliance</b>
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**

<b>Particulars</b>	<b>Statement of Compliance</b>
Engine Control	
Generator Monitoring	
Generator Protection	
Engine Monitoring	
Clear Text Display	



### 3.6.2 SHUTDOWN FUNCTION

<b>Particulars</b>	<b>Statement of Compliance</b>
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

<b>Particulars</b>	<b>Statement of Compliance</b>
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, 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 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	Commissioning shall include fuel for eight (8) 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.	
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.	
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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