Specification for Generator

***General:***

*An International NGO would like to purchase a diesel driven fixed type generator with 150 KVA capacity. The generator shall be designed in accordance with standard and specification specified herein. It shall be used for maintaining office requirement with 35 number of Air conditioner, 70 number of Computer, 10 Printer, 5 photocopier, 03 fridge, 01 lift and other required appliances. Engine generating set to be used as a backup power source for the electric supply disruption / failure. The Generator* shall be skid mounted complete with Canopy for outdoor installation, exhaust pipe, Automatic Changeover Switch, Emergency off Push Switch.

**Engine other requirement:**

Engine Type: water cooled

Fuel type: Diesel

Fuel Consumption Rate: please specify hourly consumption rate during 75% load

Anti-vibration mounting: Built-in between base-frame & generator set Generator to provide Low Fuel Level Alarm

Controller: digital display for generator set parameter including engine with visualization

Other: 230-415volts, 50 Hz, 0.8 power factor, 3 Phase, 1500 rpm

**Environmental conditions:**

Indoor type heavy duty fabricated steel base with lifting point, covered by Sound and weather proof

**Standard & Quality:**

1. The quality standard for manufacturing of Engine & Alternator must meet ISO -9001: 2000 certificate.
2. All the goods specified herein as per specification must be foreign made, best quality & built-in.

**Fuel Tank**

Please specify capacity of the tank to store fuel for minimum running hour.

The tank should be made of steel and be equipped with the following:

a) Breather pipe.

b) Level gauge

c) Inlet/Outlet connection.

d) Drain Valve.

**Auto voltage regulators (AVR):**

AVR Shall be of having improved performance with 3 phase rms. sensing for regulation of 0.5% or better. The following control features shall be included in the AVR.

(a)Voltage drop. (b)Voltage level

(c)Voltage gain. (d) Shut down indicators.

**Engine and Generator Arrangement:-**

(a) The combined engine-generator unit shall be mounted onto a common base frame through anti-vibration rubber to reduce transmission of variation and covered by a canopy. As per as possible the nut-bolt should be made of Stainless steel (SS).

(b) The control Panel shall be of enclosed type (fitted inside the canopy) and made from steel sheet provided with front panel for internal inspection and connection, whereby Weather protection must be provided.

Meters and indicator lights to monitor the operating state of the Generator shall be mounted on the front panel.

**Protection (for engine):**

Should the operation of generator fails due to any circumstances mentioned below, it will be automatically shut down.

a) High engine temperature

b) Engine over speed

c) Lubricating oil pressure low.

d) Fail to start

13. Protection (for alternator):- Alternator shall have the following protection:

a) Overload

b) Abnormal output.

**Local indication:**

The following indications must be provided:

a) Low oil pressure.

b) High engine or cooling water temperature.

c) Start fail

d) Over Load.

e) Charger failure

f) Low fuel level etc.

**Starting Battery Charger:**

Built-in auto battery charger shall be used to charge starting the battery which shall be fitted inside the canopy for safety. Battery Rating 12V, 1x150AH

**Canopy:**

The Generator shall be completed with Canopy for outdoor installation (Noise 63 dB at 7 Meter) sound & weather proof, steel made, Manufacturer built–in. The NGO have available space 12.3’ x 5.5’ for installation of the generator including Canopy

**Standard Tools Box:**

01 number of. Tools Boxes for Generator comprising of standard Tools.

**Operational manual:**

The supplier shall provide one copy of maintenance & operational manuals and spare parts catalogue for generator set and provide adequate training through their local agent to NGO office personnel.

**Service and Maintenance:**

After minimum two years of warranty period, there will be required for service and maintenance contract. The supplier shall mention separately yearly service contract amount after warranty period

**Warranty**

Minimum of 2 years from the date of Installation.

**Country of Manufacturing and Country of origin:**

Country of manufacturing, origin and country of the port of shipment of the complete Generator set including Generator and the Alternator shall be any of the followings: **UK/USA/Japan/Germany**

**Installation:**

Supplier shall be responsible for complete installation, testing, Commissioning of the Generator at NGO office. Supplier shall provide RCC/CC Foundation for the Generator, connect the generator to the Auto Change over Switch and shall provide necessary fuel for initial testing, commissioning and running of the Generator on load.

The NGO office has existing installed infrastructure with cabling, and auto switch for 3 numbers of floor. Additionally required 01 auto transfer switch to connect another floor. Supplier shall quote one number of auto change over switch price with the quotation.

**Training**

Supplier shall provide necessary training on operation and maintenance of the specific Generator set to 1-2 persons nominated by the owner. Before the training, supplier shall handover necessary operator’s manual and tool box to the owner.