



प्रसारभारती / PRASAR BHARATI
भारतीयलोकसेवाप्रसारक/ INDIA'S PUBLIC SERVICE BROADCASTER
अपरमहानिदेशक(अभि.)(द.क्षे) काकार्यालय/ O/O. ADDL. DIRECTOR GENERAL (E)(SZ)
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F.No. J-11014/6/2026-DD Proj-ADG(E)-(SZ)E.347200

Dt: 04.08.2026

Sub: Request for Budgetary quote for SITC of Liquid Cooled, stand alone, silent type Diesel Generator Set with Standard & AMF Control Panel of 500 KVA capacity, 415 V, 3 phase, 50 Hz, 4 wire including earthing system 4 nos is required at GDDRC HYDERABAD **from vendors / OEM - Reg**

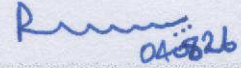
Sir/Madam,

It is hereby requested the Budgetary quote for SITC of Liquid Cooled, stand alone, silent type Diesel Generator Set with Standard & AMF Control Panel of 500 KVA capacity, 415 V, 3 phase, 50 Hz, 4 wire including earthing system 4 nos is required at GDDRC HYDERABAD **from vendors / OEM.**

The budgetary quote for the above SITC may kindly be provided by email to **tvproject_sz@yahoo.com** on or before **11.08.2026.**

Encl: Technical Specification 500 kVA DG Set.

भवदीय /Regards,


04/08/26

(पी.एन.एम. श्रीनिवास/ P.N.M. Srinivas)

ए डी ई - टी वी पी/ADE-TVP

कृतेअपरमहानिदेशक (प्र.सं.)(द.क्षे) / for ADG(BO)(SZ)

TECHNICAL SPECIFICATIONS OF 500 KVA SILENT DG SET FOR GDDRC HYDERABAD

The detailed requirements of Design, Supply, Installation, Testing and Commissioning of 500 KVA DG set in Acoustic enclosure(Canopy).

SECTION -1

- **Scope of work**

SITC of Liquid Cooled, stand alone, silent type with Acoustic Enclosure (Canopy) Diesel Generator Set with AMF Control Panel of 500 KVA capacity, 415 V, 3 phase, 50 Hz, 4 wire, is required at GDDRC HYDERABAD, including earthing system 4 no's as a standby power source for the Broadcasting Equipment. The equipment to be supplied should therefore be rugged, highly reliable & very efficient and be suitable for trouble free operation for continuous use with proven field performance record.

1. ENGINE

The engine shall be stationary, compression ignition, totally enclosed, Radiator cooled, 4 stroke direct injection, turbo charged 1500 RPM in accordance to ISO 3046 and IS: 10002 complete with all accessories.

The D.G. engine shall be suitable for black start. The DG engine shall be designed without any limitations on the number and frequency of starts in any given period. The Electronic Instrument panel shall be provided with minimum indications as defined below in the document.

The bed plate shall be fabricated from M.S. channel of suitable size as required. The welding shall be radiographed, and the entire fabrication shall be stress relieved after welding. The bed plate shall have integral well ribbed diaphragms for supporting the main bearing housings. This plate shall have an integral lube oil pump and shall be mounted with the engine and exciter on a common steel sub-base. The Engine shall be of approved make only.

2. ALTERNATOR

The alternator shall be brushless synchronous and suitable for 3 phase 415 Volts, 4 wire, 50 Hz, 0.8 p.f., 1500 RPM. The alternator shall be suitable for coupling directly to the diesel engines. It shall be Drip proof, screen protected as per IP 23. The alternator shall be single bearing type and self-ventilating. The Alternators shall be provided with fully interconnected damper windings to facilitate parallel running. The alternators shall be continuously rated and shall have class 'H' insulation designed and built to withstand tropical conditions. It shall generally conform to IS:13364(Part-20) Latest. The efficiency at rated power factor at 75% of full load should be 95%, voltage regulation to be VG3.

AMF CONTROL PANEL

	INDENTER'S REQUIREMENT	Compliance
	Automatic mains failure (AMF) control panel shall be able to start up the DG set and transfer the loads on to the DG sets on mains failure without requiring any human intervention. Similarly on restoration of mains supply it shall be able to transfer the load to mains supply and switch off the DG set automatically.	
	The AMF Control Panel shall be fabricated from steel sheet of minimum 1.5 mm thickness, duly pretreated and aesthetically finished. The Control Panel shall be totally enclosed, dust and vermin proof, floor mounted and suitably placed to the height for Operations and Maintenance and type with degree of protection IP 53 as per IS : 2147 : 1962.	
3	<i>The AMF Control Panel shall have the following instruments :-</i> (B) <i>Microprocessor based system with RS 232 serial port with full duplex communication and composite meter</i> for digital display of: • Generator voltage / AC mains voltage (C) Generator current (D) Load current (E) Power Factor (F) Frequency meter (G) Energy Meter (H) Mode selector switch for setting the panel on any one position such as off or auto or manual or test (I) Engine On - Off (Push button type) (J) HRC Fuses of suitable ratings (K) Rectangular Aluminium bus bars (one number for each phase, neutral and earthing terminal) of adequate ratings duly colour coded with heat shrinkable PVC sleeves (L) <i>Two MCCB's of suitable ratings (one for DG set & one for AC mains) with over load relay</i> (M) Under voltage relay for mains (N) Three attempt engine start / engine cranking relay (O) On delay timer for load change over (P) On delay timer for engine shut off	

	(Q) Push button switch for ON and OFF operation (R) Pilot lamps three numbers for three phase DG sets (S) Battery charger complete with voltage regulator, float/booster selector switch, on - off switch, voltmeter & ammeter for charging the battery from the mains. This will be in addition to the battery charging alternator fitted on the engine instrument & control MCBs (T) Five number-indicating lamps to indicate mains low voltage, load on mains, set running, load on set and battery charger on. (U) Audio visual alarm for low lubricating oil pressure, high liquid temperature (for liquid cooled), high cylinder head temperature (for liquid cooled), Start failure and DG over load. (V) Cable size : 240 Sqm 4 core ,Aluminium, Armoured cable 3 Runs (W) Sufficient space shall be provided in AMF Panel for cable entry, loop cable and necessary cable termination to the respective MCCB's. (X) Emergency Stop Switch to be provided.	
	NOTE: DG Foundation and 240sqmm, 4 core, Armoured, Aluminium ,XLPE, cable will be provided by the Department.	

ACOUSTIC ENCLOSURE (Canopy)

CPCB IV+ approved acoustic enclosure and other standard accessories to be complied.

Silent DG Set container shall be of modular construction with the provision to assemble and dismantle easily at site. The enclosure is fabricated out of CRCA sheet of 16 SWG.

The sheet metal components are hot dipped in NINE TANKS pre-treated before powder coating. Enclosure is powder coated (inside as well outside) with a special pure polyester based powder. All internal Nuts and bolt are made of MS and all external Nuts and Bolts are made from stainless steel. The doors are jacketed with high quality EPDM jackets to avoid leakage of sound. The door handles are lockable type. Sound proofing of enclosure is done with high quality rock wool/mineral wool confirming to IS 8183 of 100 mm thickness and density at 64 kg /M3 with fire retardant grade.

The rock wool is further covered with fiber glass cloth and perforated powder coated MS sheet. Specially designed attenuators are provided to control sound at air entry to the container and exit from the container. Adequate ventilation is provided to meet air requirement for combustion and heat removal. Viewing window is fitted with toughened glass. As per CPCB norms with acoustic

enclosure the noise shall not be more than **75 dBA at one meter at 75 % load under free field condition.**

Testing & Certification

The following tests shall be performed at manufacture's works prior to packing and dispatch to site. Test report has to be submitted along with documentations

On DG Set

- a. Maximum power load capacity.
- b. Maximum motor starting capacity
- c. Endurance test.
- d. Fuel consumption at full load, 50% load, 75% load and 25% load.
- e. Engine - Alternator cooling air flow.

On the Alternator

- a. High voltage tests on stator and rotor windings.
- b. Insulation resistance of stator and rotor windings.
- c. Temperature rise test.
- d. Measurement of resistance of stator and rotor windings.
- e. Measurement of losses.
- f. Mechanical balance.
- g. Load rejection and over speed tests.
- h. Stator voltage and current tests.
- i. Stator phase sequence check.

On the Exciter

- a. High voltage tests on stator and rotor winding.
- b. Insulation resistance of stator and rotor windings.
- c. Temperature rise test.
- d. Measurement of resistance of stator & rotor winding.
- e. Measurement of losses.
- f. Response ratio test.
- g. Over speed test.
- h. Mechanical Balance test.

On the Automatic Voltage Regulator

- a. Sensitivity test.
- b. Response time test.
- c. Shop inspection

All routine test as per IS/BS codes shall be conducted on alternator, exciter and AVR.

INSPECTION AND TESTING AT SITE

a. All pre-commissioning and commissioning test and checks shall be carried out at site. The test carried out shall be as per the relevant standards.

b. For examination and testing of materials and the works at site, the Contractor shall provide necessary testing and gauging equipment as required. All such testing and gauging equipment shall be tested for calibration at any approved laboratory.

c. The Contractor shall give notice well in advance to the Engineer-in-Charge before commencement of any site testing. All materials like consumable stores, oil, grease, lubricating oil etc. required for the trails shall be arranged by the contractor. All first fill of oil, lubricant, coolant etc will be part of commissioning. Only HSD Fuel for trail and latter runs shall be provided by the Department.

d. The Contractor shall make all necessary hook-ups to carry out tests at site.

e. The complete installation should be initially started and checked out for operational compliance by manufacturer's representative.

f. The contractor should arrange for a hands on training for operation & day to day maintenance training to Doordarshan nominated Engineer along with copy of O&M manual.

g. Along with final documentation, two set of O&M manual, two set of Spare part list, two set of drawings, Panel detailing, wiring drawings etc and two sets of test certificate, certificate required by PCB, warrantee certificates, Performance guarantee has to be handed over.

Certification & Labelling Requirements

It is necessary that the DG / Genset supplied is manufactured /assembled by agency possessing valid certifications of Type Approval and a certificate for Conformity of Production with noise limits from CPCB. The supplied gensets should be only from certified manufacturers. It is essential for every manufacturer to paste a conformance label on the genset. This label should specify details about the product which includes: name and address of the manufacturer; statement which denotes that the 'product is in conformance to Environment (Protection) Rules, 1986'; noise limit of genset i.e. 75 dB (A) at 1m; the Type Approval certificate number and the product's date of manufacture

Performance Requirement

The D.G. set shall operate up to 110% of rated speed, without undue vibration and noise. The unit shall be capable of delivering rated output at **0.8 p.f.** at the generator terminals (after de-rating of the engine due to site conditions). As soon as the set attains rated speed the transient voltage drop at the generator terminal shall not exceed 10% of rated value.

Guaranteed Performance

The following items of performance shall be guaranteed by contractor in respect of D.G. sets, auxiliaries etc. when operating under site conditions specified elsewhere.

1. Net electrical output shall not be less than 80% of the rated output.
2. Fuel oil consumption at 1/4, 1/2, 3/4 and full load shall not be greater than 3% of guaranteed specific fuel consumption as given in the Technical Data.
3. Lubricating oil consumption shall not be greater than 5.0 % of specified lube oil consumption as given in the Technical Data.
4. 10% over load for one hour without overheating or showing signs of undue stress and within specified frequency variation.
5. Freedom from vibration and noise. Noise level should not exceed 75 dB at distance of 1 m or as per latest CPCB norms.
6. Generator efficiency at 1/4, 1/2, 3/4 and full load to be as per technical data furnished.
7. Governor response, over speed trip and speed gear capability.
8. Voltage regulator response and voltage regulation shall be within + 1%.

9. Excitation and full load under specified variation of speed and voltage. (The contractor shall indicate the standards according to which tolerances on the performance figures will be applicable)

Defect Liability Period / Warrantee period

The defect liability period / warrantee period for satisfactory performance of the works will be for **24 months (2 years) from the date of Commissioning**, completed in all respects with all relevant formalities having been completed. Any defect observed in work/ job / product, during this period has to be rectified / reworked / replaced by contractor/supplier at his own cost & risk. During the defect liability period and or warrantee periods, the service team of the vendor or OEM should visit the site on quarterly basis to carry out the preventive maintenance checks of the system and attend & rectify the breakdown calls / complaints registered with them. No payment shall be made for the service charges or manpower visit charges, material or part replaced during the warrantee period and the rates are deemed to be included in the overall project cost. However the consumables required (like oil, grease, filters, coolant, gaskets etc) for the B checks / 6 monthly checks shall be arranged by the Supplier or supplier nominated Dealer.

Receiving Terminal's site team as per operational training given to operators.

Quarterly visit of Service Engineer for preventive health checkup, B check and or monitoring of the machines. (min 4 in a year) shall include preventive maintenance of all systems has to be done including cleaning of movable parts & other half yearly / yearly maintenance schedule as per OEM. within 48 hours and repair / replacement of original parts as per manufactures recommendation.

Environment Protection Norms

DG Sets shall meet the requirements of environmental (protection) rules 1986 as laid down by Min. of Environment and Forest with GSR 371 (E), dt. 17.05.2002, GST 520(E), dt. 01.07.2003, No. 448(E), dt. 12.07.2004, GSR77(E), dt. 11.12.2013, GST 232(E), dt. 31.03.2014, Gazette Notification No. 167, dt. 31.03.2014 and Gazette Notification No.578, dt. 11.11.2014 in respect of noise and emission norms. The latest amendments to the above GSRs shall be applicable as and when amended by the Min. of Environment and Forest.

TECHNICAL SPECIFICATIONS FOR 500KVA SILENT DG WITH ACOUSTIC ENCLOSURE (CANOPY) FOR GDDRC, HYDERABAD

SECTION - II

Technical Specification for Silent DG set of 500 kVA with AMF Control Panel Outside Canopy			
Specification	Sub-Spec	Value	Compliance by supplier
Power Generator Installation Configuration	Power Generator installation configurations as defined in CPWD General Specifications for Electrical works - Part VII (DG Set)	Fixed (Skid Mounted)	
Output Capacity Rating/ Phase	Nominal Rated Capacity (kVA)	500	
	No of Phase (Single Phase-3- 5kVA) (Single Phase or Three Phase- 5 & 7-5, 10,15, 20, 25, 30 & 40 kVA) (Three Phase-50 to 900 kVA)	Three Phase	
Engine	Rated Engine Power (kWm)	100 % of the required powered at STP(Standard Temperature Pressure) i.e equal to (Nominal Rated Capacity (KVA) of power generator + Any Auxiliary power	
	Type of Engine cooling	Liquid Cooled	
	No of Strokes (nos)	4	
	Rated RPM of Engine (RPM)	1500	
	Fuel	High Speed Diesel (HSD)	
	Overload capacity	Engine is capable of delivering an output of 10% in excess of rated KVA for a	
	Specific Fuel Consumption (gm/kWh)	200 to 265	
	Starting voltage (volt)	24	
	Ambient Working Temperature Range	45°C to 55°C	
	Salient Features of Engine	Turbo Charged Engine, equipped with either proprietary PT (Pressure-Time) fuel injection system	

		or heavy-duty industrial CRDi.Engine	
	Bore and Stroke (mm)	159mm x 159mm (for 6-Cyl platform) OR 130mm x 150mm (for 10-Cyl platform).	
Governing Class	"Maximum Change of Speed as a Percentage of Rated Speed on suddenly taking-off the rated load(Transient) "	15	
	"Maximum Recovery Time in Seconds on suddenly taking-off the rated load(Transient) "	15 second	
	Maximum Change of Speed as a Percentage of Rated Speed on suddenly taking-off the rated load(Permanent)	5	
	"Maximum Change of Speed as a Percentage of Rated Speed On a change of load, both on and off, by all steps of 25 percent of the rated load (Transient) "	4	
	"Maximum Recovery Time in Seconds on a change of load,both on and off, by all steps of 25 percent of the rated load(Transient) "	5 Second	
Alternator	Alternator Voltage Rating	415 Volt	
	Rating of AC Generator (KVA)	500	
	Power Factor of AC generator	0.8	
	Efficiency at rated Power factor at 75% of full Load	95%	
	Conformity to Indian Standard (for Alternator)	Generally conforming to IS:13364 (Part-2) latest (Above 20 KVA)	
	Voltage Regulation Grade	VG 3	
	Alternator IP Rating	IP 23	

	Class of Insulation	H	
	Control Panel	AMF Control Panel (Auto Starting Facility)	
	Control Panel Location	Outside the Canopy	
	IP Rating of Control Panel	IP 54/ IP 55	
	Display meters in the control panel (with appropriate rating and accuracy class) - inclusive in the scope of supply	Multifunctional Digital display meter (displaying Voltage, Current, Frequency, Power Factor)	
	Other devices in the control panel (with appropriate rating) - inclusive in the scope of supply	Required switches and cutout, MCB, Contactor, Battery charger	
Control Panel	Displayed parameters/Features in Multi Functional Digital Display Meter.	Engine Speed,Lube oil pressure,Coolant/cylinder head Temperature,Engine running hours, engine battery voltage, engine running status, generator voltage (phase to phase) generator voltage (phase to neutral), generator current (RYB), generator apparent power (KVA), generator active power (KW), power factor, frequency, fuel level, event log, control supply voltage.	
	Indicators	Low Lube oil pressure, High water / coolant / cylinder head temperature, Low Fuel level, Overspeed	
	Audio Alarm	Low Lube oil pressure,High water / coolant / cylinder head temperature,Low Fuel Level, overspeed	
	Audio Visual Alarm	Low Lube oil pressure,High water / coolant / cylinder head temperature, Low Fuel level, Overspeed	

Acoustic Enclosure	Sheet Thickness(mm)	1.6	
	Thickness of insulation	25 millimeter	
	Density of insulation (kg/cubic m)	28	
	Noise level at 1 meter (dB)	≤ 75dB	
Fuel Tank	Fuel Tank Capacity	850 to 900 Litres	
	Number of Fuel tank	1	
	Fuel Tank Sheet Material Thickness(mm)	2	
	Fuel Tank Fabricated Material	M.S Sheet	
	Fuel Tank Features	Fuel Tank capacity is sufficient for 8 hrs of running at full load	
	Dimensions (L X W)	5600 mm x 2200 mm	
Battery	Battery Type & Specification	"Low Maintenance free to IS: 14257 for high cranking performance"	
	Battery capacity (Ah)	120	
	Battery Voltage	24V	
	No of batteries	1	
General Technical Requirements (GTR) /	General Technical Requirements (GTR) /Commissioning(Part-1)	a) Power Generator shall be complete with Diesel Engine, Alternator and AMF/MANUAL Control Panel along with Acoustic Enclosure. Diesel engine and Alternator shall be closely coupled or provided with flexible coupling and mounted on a Base plate/MS frame of robust in construction.	
	General Technical Requirements (GTR) /Commissioning(Part-2)	b) Anti-Vibration mountings shall be provided for complete Power Generator in case of flexible coupling. In case of direct coupling Anti-Vibration mountings shall be provided for the Engine as well as the alternator.	

	General Technical Requirements (GTR) /Commissioning(Part-3)	c) Power Generator should have protection against under voltage, over voltage, under frequency, over frequency, low battery voltage, over current, earth-fault, short circuit, phase sequence change etc.	
	General Technical Requirements (GTR) /Commissioning(Part-4)	d) Automatic Mains Failure (AMF) control panel, where applicable, shall be able to start up the Power Generator and transfer the load on to the Power Generator on mains failure without requiring any human intervention. Similarly on restoration of mains supply, it shall be able to transfer the load to mains supply and switch off the Power Generator automatically.	
	General Technical Requirements (GTR) /Commissioning(Part-5)	e) Control Panel (Manual / AMF), where applicable, shall be equipped with suitable Voltmeter, Ammeter, Frequency meter, power factor meter (these items can be alternatively supplied in one multifunctional digital display meter), battery charger, indicators, various switches and cutout / MCB /MCCB / Contactor / Circuit breaker for the DG output of appropriate rating and accuracy class as per trade practice for better utility.	
	General Technical Requirements (GTR) /Commissioning(Part-6)	f) Supply and installation of a change-over Switch / MCCB of suitable rating for Power Generator with manual control panel, where applicable, is inclusive in the scope of supply.	

	General Technical Requirements (GTR) /Commissioning(Part-7)	g) Acoustic Enclosure shall be made of Pre-treated and Powder coated CRCA Sheet. The sheet shall be Pre-treated and Powder coated with weather-proof paint. The Acoustic Enclosure shall be vermin proof. The enclosure shall accommodate the (daily service) fuel tank of the Power Generator to make the system compact	
	General Technical Requirements (GTR) /Commissioning(Part-8)	h) Power Generators shall meet the requirements of Environmental (Protection) Rules 1986 as laid down by Min. of Environment & Forests read with GSR 371 (E) dated 17.5.2002,GSR 520(E)dated 1.7.2003 , No.448 (E)dated 12.07.2004 , GSR 771(E) dated 11.12.2013 GSR 232(E)dated 31.03.2014,Gazette Notification No.167 dated. 31.03.2014 and Gazette Notification No. 578 dated. 11.11.2014 in respect of noise and emission norms. The latest amendments to above GSRs shall be applicable as and when amended by Ministry of Environment and Forest.	
	General Technical Requirements (GTR) /Commissioning(Part-9)	i) Standard set of tools consisting of a set of 3 spanners, one screw driver, one standard plier and one nose plier of appropriate size shall be provided along with each Power Generator.	

	General Technical Requirements (GTR) /Commissioning(Part-10)	j) Supply of Fuel tank of suitable capacity, sufficient for minimum 8 hours running/990 liters (whichever is lower) the Power Generator, is inclusive in the scope of supply. Fuel Tank shall be complete with fuel piping (between fuel tank and diesel engine), valves, level indications and all standard accessories. MS pipes, heavy class of suitable dia conforming to IS 1239 (Part-1) - latest shall be used for fuel piping.	
	General Technical Requirements (GTR) /Commissioning(Part-11)	Buyer's Responsibilities: i. Mains MCCB for AMF operation shall be provided by the buyer for DG set rating above 600 KVA and above .For DG set other ratings seller shall provide mains and DG contactor / breaker, ii. Exhaust piping, extra civil work, distribution board shall be provided by the buyer. iii. Consumables such as filters, lube oil at the time of servicing during warranty period shall be provided by the buyer. iv. Obtaining necessary approvals, if any, is the responsibility of the buyer.	
	Above General Technical Requirements (GTR) / Commissioning have been seen, read, understood and agreed to comply		
	Installation	With installation	
	Warranty on Complete power genertor/DG	24 month	

	Set		
	Warranty in running hours	2500 hour	
	Number of preventive maintenance visits offered in an year during warranty period (Supply of all consumables is the buyer's responsibility)*	2	
	Response Time to attend the complaint during Warranty	7 day	
	Time Duration for Repairing /Replace the defect during Warranty	30 day	
	Type of lab which carried out Test of Complete Product to prove the conformity of product as per specification	Certificates required as per CPCB	
	Test report Available for (Test/approval)	Type Approval Certificate for the specified rating of the Power Generator from any of the designated agency authorised by CPCB, COP certificate for engine, type test report for alternator as per IS :13364 (Part 1) latest/IS: 13364 (Part2) latest to prove conformity to the specifications.	
	Test Report/supporting document /reports etc to the buyer at the time of bidding or on demand	Supplier should provide all relevant documents	

Additional Technical Specification:

Additional Technical Specification for Silent DG set of 500 kVA with AMF Control Panel Outside Canopy			
Specification	Sub-Spec	Value	Remarks
Engine	Capacity of Engine (CC)	Should be 15000 - 19000 CC	(Re-assembled, automotive-derived, or multi-brand crossover engines with fractional displacements are strictly rejected.)
	No. of Cylinders	12 Cylinders (V-Type)	
Alternator	Class of Governor	A1/ISO 8528 Part-5 Class G3 for electronic transient load response.	The alternator must utilize a 2/3 winding pitch design to eliminate triple harmonics and be directly coupled to the flywheel via a flexible laminated steel disc drive mechanism.
	Manufacturer	OEM Only	
	Type of Alternator	Brushless / Self-excited 4-pole	
Acoustic Enclosure	Acoustic Enclosure	Power Generator supplied with acoustic enclosure compliance mandatory for the latest CPCB IV+ emission and acoustic norms	
	Engine shall be manufactured by the OEM	The Engine, Alternator, and Control System must be fully tested, integrated, and certified as a single product prototype at the approved OEM's factory. The bidder must submit a valid Type Approval Certificate and Conformity of Production (COP) Certificate for the specified rating (500 kVA) issued directly to the approved OEM by a CPCB-authorized nodal agency (e.g., ARAI / NABL) along with the technical bid	
		Remote Monitoring System sharing real-time genset information and location services including parameters of the engine.	

		Availability of genuine spares for at least 10 years.	
		Manufacturer shall have authorised service centres in the concerned State within 50kms radius.	
Earthing System	Conventional Copper Plate Earthing (four No's)	Building suitable earthing station and necessary connections shall be done by firm. <i>The total number of earthing pits/stations shall be 4 i.e. 2 for neutral and 2 for body-earthing as per Diagram 1 in Section IV.</i> The Installation officer at site will choose installation site in such a way that the earthing system terminal can be made within 10 metres of the DG set. Earthing station shall be typically built as per prevalent standard practices. All the 4 earth should be done with <u>Copper plate earthing with Copper Plate 600X600X3mm copper strip (50mmX50mmX3mm) including standard accessories and 50mm dia GI pipe connected to the electrode. The value of the earth resistance should be less than or equal to 1 ohm.</u>	

Special Terms & Conditions

1)DG Foundation will be provided by the Department and 240sqmm, 4 core, Armoured , Aluminium ,XLPE, cable will be Supplied by the Department.

2)Installation, Testing , Commissioning of the 500 KVA DG with AMF Operations on load as per the contract agreement.

3)All power and control cables, from DG to AMF Panel Including Earth Strip Excavation , laying and termination are in the scope of the supplier.

4) Supplier may visit the site if required for any site details.

Only bids featuring factory-assembled Diesel Generator sets from the **OEMs (Original Equipment Manufacturers/OEM Authorized)** shall be considered technically eligible.

Payment Terms:

Payment shall be made as follows:

80% of the cost of materials/service/insurance/ Transportation and 100% GST charges in item No.1 under Section III will be released upon supply of DG Set in good condition at site.

The 100% payment in respect of remaining items and work balance 20% will be released after satisfactory completion of SITC of DG Set at Doordarshan Geo Diversity Disaster Recovery Center, Chintalakunta, LB Nagar, Hyderabad.5

SECTION –III
BILL OF MATERIALS

Sr. No.	Service Code	DESCRIPTION	Unit	Qty.
1		Design, manufacturing, supply of DG Set of 500 KVA rating for site conditions, complete with Diesel Engine base frame, lube oil system, Radiator, required batteries, governor, instrumentation, fuel system, Fuel Tank, exhaust silencers including Aluminium cladding, alarms, engine mounted control panel, utility piping, anti-vibration pads, 415/440 V Alternator direct coupled to Engine along with static excitation system and AVR panel, Emergency Stop. AMF Panel with four pole 630A MCCB and battery charger along with annunciation of all engine and alternator parameters, metering and lamps all required accessories complete as required and as per specifications. Load side terminal Box to be provided for termination of required 3 Runs of 4 Core 240 Sqmm Aluminium Armoured Cable as per rating. The DG Set shall be provided with genset controller. The job to include Design, manufacture, testing at works. Supply of Acoustic Enclosure for the DG Sets as per latest CPCB standard complete as required and as per specification. DG SET To be delivered at site and positioned over the foundation in the presence of Installation Officer.	SET	1
2		Providing Copper Plate Earthing System as per Earthing Specifications Diagram in Section IV and necessary connections shall be done by firm. <u>The total number of earthing pits shall be 4 No's i.e. 2No's for neutral and 2No's for body-earthing.</u> The earthing system terminal can be made within 10 meters of the DG set. Earthing station shall be typically built as per prevalent standard practices. Laying of Copper. All the 4 Earthing should be done with Copper plate earthing with Copper Plate 600X600X3mm copper strip (50mmX50mmX3mm) including standard accessories and 50mm dia GI pipe connected to the electrode. The value of the earth resistance should be less than or equal to 1 ohm. <u>Electrolytic Copper purity of 99.5% Certificate to be submitted to the Installation officer before commencing the work at site.</u>	Approx	4 Nos 40 Meters
3		<u>Installation, Testing ,Commissioning of the DG with AMF Operations on load as per the Terms and Conditions mentioned in Section II.</u>		

LIST OF PREFERRED MAKES FOR 500kVA ACOUSTIC ENCLOSURE DG SET:

- 1) M/s. Cummins India Ltd. (Engine: Cummins)
- 2) M/s. Kirloskar Oil Engines Ltd. (Engine: Kirloskar)
- 3) M/s. Greaves Power
- 4) M/s. Ashok Leyland
- 5) M/s. Mahindra Powerol
- 6) M/s. Koel Green Electro

Section IV

Diagram -1

