

PRASAR BHARATI  
(Broadcasting Corporation of India)  
OFFICE OF THE ADG(E), (SOUTH ZONE)  
ALL INDIA RADIO & DOORDARSHAN  
Swamy Sivananda Salai, Chennai - 600 005

NO. CESZ/PUR/09/PSEA/2011-12/

Date:- 24.08.2011

SUB: SITC of Water cooled, Standalone, Silent type Diesel Generator set with standard & AMF Control Panel of 250 KVA Capacity, 415V, 3ph, 50Hz 4wire, at Doordarshan Kendra Chennai.

Sir,

Kindly find enclosed the tender enquiry for the Supply, Installation, Testing and Commissioning ( SITC of 250 KVA Watercooled DIESEL GENERATOR with acoustic enclosure, including Standard & AMF control Panel suitable for installation at Doordarshan Kendra Chennai., Tender documents can be downloaded from the following web sites on free of cost:

[www.ceszaidd.org.in/tenders.html](http://www.ceszaidd.org.in/tenders.html)

[www.allindiaradio.org/tender.html](http://www.allindiaradio.org/tender.html)

[www.tenders.gov.in](http://www.tenders.gov.in).

The tenders will be received at the Office of The ADG(E) (SZ), AIR & DD, Swamy Sivananda Salai, Chennai-5, up to **1230 Hrs** on **15.09.2011**. The technical bid and E.M.D. will be opened on the Same day at **1500 Hrs**. The commercial bid will be notified after recommendation of technical committee.

Yours faithfully,

(M.SUJATHA)  
Assistant Engineer  
for ADG(E) (SZ)

PRASAR BHARATI  
(BROADCASTING CORPORATION OF INDIA)  
OFFICE OF THE CHIEF ENGINEER (SOUTH ZONE)  
ALL INDIA RADIO & DOORDARSHAN  
SWAMI SIVANANDA SALAI, CHENNAI-600 005.

NO. CESZ/PUR /09/PSEA/2011-12/

Date:-24.8.2011

**SUB: SITC of Water cooled, Standalone, Silent type Diesel Generator Set with standard & AMF Control Panel of 250 KVA Capacity, 415V, 3ph, 50Hz 4wire, at Doordarshan Kendra Chennai.**

**1. DESCRIPTION:-**

SEALED TENDERS ARE HEREBY INVITED FOR AND ON BEHALF OF THE PRESIDENT OF INDIA, FROM REPUTED FIRMS FOR THE SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF **WATERCOOLED, STANDALONE, SILENT TYPE DIESEL GENERATOR SET WITH STANDARD & AMF CONTROL PANEL OF 250 KVA, CAPACITY 415V, 3PH 50HZ 4WIRE, AT DOORDARSHAN KENDRA CHENNAI.**

**The tender shall consists of three parts (bids) namely:**

(a) **EMD:-** Earnest Money amounting **Rs.40,000** /- (Rupees Forty thousand Only) in the form of Demand Draft on Nationalized Bank drawn in favour of ADG(E)(SZ), AIR & DD, Chennai-5 should accompany the tender'. EMD by means of Bank guarantee or any other mode of payment other than DD shall not be accepted. Tenders without EMD shall be summarily rejected and their technical cum commercial bid will not be opened at the time of tender opening. (No exemption for payment of EMD is accepted by this office.)

(b) **TECHNICAL BID:**

Technical bid should contain the confirmation to the enclosed technical specifications. This should be submitted in a separate sealed envelope **with "TECHNICAL BID"** written on it.

(c) **COMMERCIAL BID:**

The commercial bid should contain the price bid and acceptance of the commercial terms and conditions of this tender document. The price should be quoted for free delivery of materials at respective destinations. This should be submitted in a separate sealed envelope with **"COMMERCIAL BID"** written on the envelope.

The tenders will be submitted in sealed envelopes with the **name of work**, date of opening and the bid enclosed written on the envelopes.

The above mentioned envelopes should be enclosed and submitted in another large size envelope duly sealed and superscribed with "SITC for 250kVA water cooled DG and date of opening. The envelope will be received at this office of The ADG(E) (SZ), AIR & TV, Swamy Sivananda Salai, Chennai-5 up to 1230 hrs. on **15.09.2011**. The technical bid and E.M.D. will be opened on the same day at 1500 hrs. The commercial bid will be notified after recommendation of technical committee.

In case tender opening date falls on a holiday, the bids will be received and opened at the same specified time on next working day. Bids received late or submitted after the scheduled specified time on scheduled date will not be entertained and will be returned back unopened.

**3. Tenderer should quote for all the required items. Partial tenders will be rejected.**

**4. VALIDITY:-** The tender shall be kept valid for three months **(90 days)** from the date of opening.

**5. PRICES:-** The prices quoted should be firm and for free delivery at site inclusive of transit insurance, excise duty and entry tax and other tax if any should be quoted separately. Tenderers should quote in figures as well as in words the amounts tendered by them. In the case of illiterates, the rates or the amounts tendered should be attested by a witness. Breakup of prices for individual/ whole units should be specified wherever possible instead of bunching all units together. Similarly supply price and works price (Like installation, testing, Commissioning) should be quoted separately.

**6. DUTIES AND TAXES:-**

**(a) EXCISE DUTY:-** The prices should contain an element of Excise Duty which should be indicated separately. Any statutory variation in the Excise Duty taking place after acceptance of tender within the delivery date will be adjusted by the purchaser on Production of documentary proof.

**(b) SALES TAX / VAT:-** The prices should be exclusive of ST/CST/VAT. The prevailing rate of ST/CST/VAT should be clearly mentioned in the tender.. The following certificates are to be submitted by the supplier along with the bills.

"Certified that the goods on which the sales tax has been charged have not been exempted under central sales tax act of the rules made thereunder. The amount charged on account of Sales Tax/VAT on these goods is not more than what is payable under provision of the relevant act or the rules made thereunder".

"Certified that we are registered as dealers in the State under registration No. for the purpose of Sales Tax. Any Statutory variation in ST/VAT taking place after acceptance of tender within the delivery date will be adjusted by the purchaser. For this purpose, Government order should be produced".

**(c) WORKS CONTRACT:-** If work contract tax is leviable by the concerned State Government on works contracts, the same shall be clearly mentioned in the Tender. The contractor should furnish the service tax number in the quotation.

**7. TERMS OF DELIVERY:-** F.O.R. Destination.

**8. DELIVERY PERIOD:-** Tenderer may note that the entire work shall be completed within **2 months** from the date of the work order. The lay out wirings and other drawings wherever applicable shall be got approved within 10 days from the date of Work order.

**EMD of all but the last three tenderer will be returned back within 10 days opening of tenders. EMD of the remaining two tenderer other than that of the successful tenderer will be returned after finalising the contract. EMD of the successful tenderer will be returned after expiry of Guarantee period.**

**9. IT CLEARANCE CERTIFICATE:-** Income tax clearance certificate shall be submitted along with the tender, without which the tender is liable to be rejected.

**10. EXPERIENCE:** The tenderer should give documentary proof for having successfully designed. Fabricated, installed and commissioned similar type of equipment/work. They should also submit list of works which are in hand at the time of submission of tender. The list shall contain the name of work, cost of work and present position of work.

**11. AFTER SALES SERVICE:-** The Tenderer should give full details of after sales service capability. The locations of service centers across the country shall be indicated. If there is no service centers at/ near the location of the site the tender is likely to be rejected.

**12. TECHNICAL SPECIFICATION AND GENERAL TERMS AND CONDITIONS:-**  
**For technical specification for other general terms and conditions see the Annexures.** The tenderer should submit necessary pamphlets description of items being offered along with technical bid and also the firms to which similar items were supplied in the near past and completion report.

**13. ACCEPTANCE/REJECTION OF TENDER:-** The acceptance of a tender will rest with the ADG(E) (SZ),, AIR & TV, Chennai-5 who does not bind himself to accept the lowest tender and reserves to himself the authority to reject any or all of the tenders received without assigning any reason.

**14. GENERAL:-** Canvassing in connection with tender is strictly prohibited and the tenders submitted by tenderness who resort to canvassing will be rejected.

(M.SUJATHA)  
Assistant Engineer  
for ADG(E) (SZ)

**Encl:-**

1. General summary	- (Page 5)
2. Section-I	- (Page 6-8)
3. Section-II	- (Page 9-15)
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**SPECIFICATIONS FOR SITC OF 250 KVA WATER- COOLED  
DIESEL GENERATOR SET WITH STANDARD & AMF CONTROL PANEL**

**GENERAL**

Water-Cooled, stand alone, silent type Diesel Generator Set with Standard & AMF Control Panel of 250 KVA capacity, 415 V, 3 phase, 50 Hz, 4 wire, is required at DDK, CHENNAI as a standby power source for the Telecasting Transmitter 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.

**SUMMARY**

1. Section I - General (General conditions governing the supply)
2. Section II - Technical Specifications (The technical parameters for the equipment offered are to be filled up by the tenderer while submitting the quotation. No cell of column ¾ of Schedule A, B, C, D & E in this Section is to be left blank by the Tenderer)
3. Section III - Schedule of Requirements [Price bid to be sealed separately]
4. Section IV - Technical specifications for Canopy for the 250 KVA DG Set

- NOTE :
- i) The Tenderer should go through all the Sections of the Specification carefully & should confirm clause-by-clause compliance to all sections clearly. Tenders without clause by clause compliance shall be rejected out rightly.
  - ii) The tenderer should indicate the list of items offered as per Schedule of Requirements of Section III in the technical bid if there are separate bids to assess the completeness of the offer.

**SPECIFICATIONS FOR THE SITC OF 250 KVA WATER- COOLED  
DIESEL GENERATOR SET WITH STANDARD & AMF CONTROL PANEL**

**SECTION – I  
GENERAL CONDITION**

This section covers the general conditions governing the Design, Manufacture, Factory Inspection, Transportation to site, Supply, Installation, Testing, Commissioning and satisfactory operation at site of the DG set with AMF control Unit. Each point of the specification is to be filled by the tenderer in column 3 for compliance/conformation and should be supported by printed literature / leaflets.

Sl. No	INDENTER'S REQUIREMENT	Compliance / Confirmation by the Tenderer
1	The Water cooled, stand alone, silent type 250 KVA DG set will be installed on a platform (provided by the Dept.) and AMF & Standard Control Panel in Transmitter Hall..	
2	The DG set shall be designed for efficient and trouble free service for continuous operation. The tenderer should fill up adequate diesel for the continuous operation of 12 Hrs. All materials used in the construction shall be as per IS : 10002 - 1981 (performance requirement for constant speed compression ignition diesel engine for general purpose( above 20 KW) Reaffirmed 1991; and 13364 (part 2 ) 1992 AC generators driven by reciprocating internal combustion engine part 2 ; alternators rated above 20 KVA and up to 1250 KVA (amended to date)	
3	All works shall be carried out in accordance with the standard mechanical and electrical practices. The units shall be designed for easy maintenance and complete safety to operating personnel	
4	The tenderers should undertake to make available spares and replacement parts as and when required for a period of ten years, after the initial guarantee period is over	
5	All fittings and accessories which may not have been specifically mentioned or which the tenderer may not explicitly mention in his tender but all are necessary for the operation of the DG set shall be deemed to be included in the contract and be provided by the contractor without any extra charge.	

Sl. No	INDENTER'S REQUIREMENT	Compliance / Confirmation by the Tenderer
6.	The tenderer shall submit the Technical pamphlets & Leaflets with illustrations of DG alternator, AMF Control unit details with schematic circuit/ wiring diagram relevant to the components offered in duplicate	
7.	Two copies of the drawings showing the dimensions, location accessories etc. of the DG set including AMF Control unit should be sent to indenter along with the tender documents	
8.	<p>Following documents / details should be supplied to the consignee along with the DG set at the time of delivery :</p> <p>i. Two copies of the book of instructions for the installation , operation and maintenance of the DG set</p> <p>ii. Factory test certificates on the engine, alternator, control panel, accessories and acoustic installation as per the relevant IS.</p> <p>Iii Two set of documents as above should be directly sent to indenter</p>	
9.	Delivery, installation, testing commissioning & handing over of the DG set shall be completed within <b>2 months</b> after the placement of Order.	
10.	The DG Set shall be guaranteed in all respects for satisfactory operation under full load condition for <b>24 months</b> from the date of taking it into service. The firm shall attend to the fault immediately if reported to him	
11.	<p><b>SUPPLY, INSTALLATION, TESTING &amp; COMMISSIONING</b></p> <p><b>( SITC) 250 KVA D.G Set :</b> The Tenderer /supplier is required for the Supply, Installation, Testing &amp; Commissioning of the above DG set at site with AMF unit with MCCB's , relays, contactors etc. ( rating suitable for 200 Amp with current setting 90 Amp) along with necessary indicating lamps &amp; energy meters.</p>	
12.	SPARES: Along with the diesel generator, the tenderer shall also quote separately for recommended spares for two years operation of DG set giving list of all spares.	
13	<p>The Earthing of the DG set shall be done by the Tenderer in accordance with provisions of IS 3043 : 1987 (code of practice for earthing) with latest amendments (4 nos: 2 nos for neutral earth; 2 nos. for chassis / body earth).</p> <p>Drawing enclosed; value of earth resistance should be less than 1 ohm.</p>	

Sl. No	INDENTER'S REQUIREMENT	Compliance / Confirmation by the Tenderer
14.	The stand alone silent type DG set will be fixed on self contained rust proof chassis complete with sound proof, weather proof enclosure with built in exhaust & ventilation system. The diesel tank should be part of the chassis.	
15.	The tenderer shall supply the data on fuel & lubricating oil consumption (ltr/ hr) of the engine at the following loadings of the alternator at site conditions (taking into consideration the various derating factors) a) 25 % load ; b) 50 % load ; c) 75% load ; d) 100% load ; e) 110% load ;	
16.	The performance of the DG set should be as per Indian standard IS: 10002:1981 (Performance requirements for constant speed compression ignition (diesel) engines for general purposes above 20 KW reaffirmed 1991)	
17.	Protection of the machine shall be as per IS 4691: 1968 with latest amendments	
18.	The tenderer should be an <b>Original Equipment Manufacturer</b> for the offered Engine and Alternator make/ MODEL (authorized by the Manufacturer of Engine & Alternator to supply their Equipments) Also tenderer should have ISO certification for his manufacturing works. Documentary proof for these are to be enclosed along with the tender	
19.	A standard list of tools including special tools required for maintenance and repair of Diesel Generator is to be quoted with the tender. The cost of these tools is to be quoted separately	
20.	The successful Tenderer will have to get the above diesel generator sets inspected by a person authorized by Indenter in his workshop / factory before dispatch as per IS . Original Type Test Certificates ( as per IS applicable) of Engine, Alternator, Standard Control Panel, accessories etc., shall be handed over to the Indenter's Inspector and routine tests as per IS shall be arranged by the Tenderer. Immediately after Inspection, the Inspection report / Certificates shall be issued by Inspector as per performance of the machine.	

**SECTION II****TECHNICAL SPECIFICATION****SCHEDULE - A**

Sl No	TECHNICAL PARAMETERS	TECHNICAL PARAMETERS FOR ALTERNATOR INDENTER'S REQUIREMENT	Compliance / Confirmation by the tenderer
1.	Type of Alternator	Brush less, self excited, self regulated. ISO 9000 certified Alternator	
2.	Electrical Output (continuous)	250 KVA	
3.	Make	Kirloskar Electrical Company (KEC) / Cummins/ STAMFORD/ AVKC Crompton & Greaves	
4.	No. of phases and interconnection between phases, if any	3 phase with Neutral, Star connected	
5.	Rated voltage	415 Volts (nominal)	
6.	Power factor	Better than 0.80 (lagging)	
7.	Frequency in Hz	50 Hz +/- 3 %	
8.	Speed in RPM at rated load	1500 RPM	
9.	Type of enclosure	Screen protected drip proof type as per IS 4691 IP 21/IP 22	
10.	Exciter	i) The alternator shall be brushless self regulated self excited and rated for continuous operation from no load to full load under all working conditions ii) The alternator shall be able to supply unbalanced load as specified in IS 13364 (Part 2) 1992 with latest amendments	
11.	Exciter rating	It shall be rated for 1.25 times the full load conditions	
12.	Type of field	Rotating field salient pole brush less alternator	
13.	Output waveform	The output waveform should be of pure sine wave, free from any harmonic interference. Total harmonic distortion should be below 3 % & it should be shown during factory test.	
14.	Earthing	As per IS 3043 : 1987	
15.	Type of duty	Continuous duty	
16.	Phase Sequence	RYB	
17.	Ambient Temperature	50 Degree Cent, R/H 95%	
18.	Class of Insulation	Class " F " (Rotor) Class " F " (Stator)	

Sl No	TECHNICAL PARAMETERS	INDENTER'S REQUIREMENT	Compliance / Confirmation by the tenderer
19.	Mounting	Horizontal, floor mounted	
20.	Voltage regulation	+ / - 1.0 % from no load to full load	
21.	Whether neutral point is to be brought down to terminal	Yes. Neutral point is to be made inside the Stator & 4 terminals to be brought to terminal box.	
22.	Cooling	Self Ventilated forced Air cooling	
23.	Temperature rise	As per IS 12802 and IS 4722 : 1992	
24.	Overload capacity	1.5 x rated FLC for 30 secs. and 10% overload for 1 hour after every 6 hours of running	
25.	Over speed	To withstand the speed of 1.2 times of the rated speed	
26.	Voltage, current & frequency measurement	Display through separate meters. Make: Preferably AE make.	
27.	Electrical Protection	Over current/short circuit / Earth fault / under voltage/under frequency protection to be provided	
28.	Vibration	As per IS 12075 : 1987 amended to date	
29.	Noise	As per IS 12065 : 1987 amended to date	
30.	(i) Terminal	Three phase with Neutral	
	(ii) Output Terminals	Terminal box shall be mounted on top of stator body and shall be suitable for connecting up to 300 sq. mm , 3 ½ core PVC insulated , PVC sheathed, Aluminium conductor armoured cable	
	(iii)Terminal Marking	As per IS 4728 : 1975 amended to date	
31.	Whether rated output is required at NTP or site conditions	At site conditions taking into account the derating as per relevant IS 1601 : 1960 (amended up to date)	
32.	Derating Parameters	To be given by the Tenderer	
33.	Rated FLC	To be given by the Tenderer	
34.	IS Code	4722 : 1992 Rotating Electric Machine	

**SCHEDULE ( B )**

**TECHNICAL PARAMETERS FOR DIESEL ENGINE**

Sl. No	Technical parameters	INTENDER'S REQUIREMENT	Compliance / Confirmation by the Tenderer
1.	Type of Engine	Self start Water cooled Turbo Charged ISO 9001 approved Diesel Engine	
2.	Make	Kirloskar / Greaves / Ashok Leyland	
3.	Capacity	i) To be rated for driving the alternator to deliver the rated full load output mentioned in Section II (A), item No.24. ii) The Tenderer shall specify the capacity of the Diesel Engine offered by him along with the computations of various derating applied as per relevant IS.	
4.	Type of fuel	H.S Diesel Oil	
5.	Method of Cooling	Water cooled	
6.	Compression Ratio	Should conform to IS Standards	
7.	IS Code	Diesel Engine shall conform to IS 10002 : 1981 (Reaffirmed) with latest amendments.	
8.	Method of starting	i) ON/ OFF through AMF Control Panel/ local control Panel. ii) The engine shall be cold starting type iii) It should have battery for starting. [24 volt battery] iv) Starting switch with key should be provided on engine control panel. v) Battery charging ammeter shall be provided for starting the battery. vi) Battery offered should be maintenance free, of good quality and of reputed make, complete with ignition charging connecting leads & terminals. The Make/ Model of the offered battery and its Amp – hour rating to be mentioned. Battery should be guaranteed for 3 years from the date of commissioning.	<u>Exide/ Amaraja</u>

Sl No	Technical Parameters	INDENTER'S REQUIREMENT	Compliance / Confirmation by the Tenderer
9.	Capacity of fuel tank in liters required.	A service tank of minimum 24 hrs running capacity along with suitable fuel gauge is to be provided The tank should be as per IS amended up to date. Capacity of Diesel should be mentioned in litres.	
10.	Speed of Engine (Direct Coupling to Alternator)	1500 RPM with class A 1 governing as laid down in IS 10000 / BS 5514.	
11.	Type of Exhaust system	A heavy duty residential type exhaust silencer to be provided. The silencer should be minimum 5 feet in height.	
12.	Engine protection	i) Over speed protection through hour meter cum RPM indicator with audio & visual alarm	
		ii) Low Lubricating Oil Pressure Protection with audio and visual alarms	
		iii) High temperature protection with audio and visual alarms	
13.	IS Code	Conforming to IS 10002 : 1981 with latest amendments	
14.	Base frame	Common MS channel fabricated, rigid, rust proof & with suitable anti - vibration Pads mounting	
15.	Testing	As per IS 10000 (Part I to Part XII)	
16.	Accessories	To be supplied with complete accessories and as per standard practice	

**TECHNICAL PARAMETERS FOR COMPLETE DIESEL GENERATOR SET**

Sl. No	Technical Parameters	INDENTOR'S REQUIREMENT	Compliance / Confirmation by the Tenderer
1.	Type of DG set	Water cooled, silent. Self contained with AMF control panel.	
2.	Dimensions of DG set including acoustics enclosure	Suitable size.	
3.	Total Weight of DG set	To be furnished by the Tenderer	
4	Base Frame	Common MS channel fabricated, rigid, rust proof and with suitable anti vibration pads mounting	
5.	Type of enclosure	DG set shall be housed in an Acoustic Enclosure consisting of Acoustic insulation, Non inflammable, ventilation system, doors & suitable for outdoor use requiring no building or construction.	
6.	Noise level	Complete DG set including engine should be super silent type & should achieve a noise level of 75 dBA at a distance of 1 mtr from the set against reasonably quiet background and should meet the Pollution Board norms for Environment protection at the time of delivery of DG set	
7.	Smoke Level	Harmful Gaseous emission shall be as low as possible and should meet the Pollution Board norms for Environment protection at the time of delivery of DG set	
8.	Earthing	The Earthing of the chassis of the machine with 25 mm x 3 mm copper strips will be done by the Tenderer in accordance with provision of IS 3043 : 1987 with latest amendments The main Earth pits (4 nos) shall also be provided outside the DG room by the tenderer for this purpose. (2 for neutral, 2 for body / chassis earth).Specified earth parts and type of materials to be used as per drawing enclosed.	
9.	Inspection	The successful Tenderer will have to get the Diesel generator sets inspected by a person authorized by the Indenter in his workshop / factory before dispatch	
10.	Testing of DG set	The testing of DG set will be demonstrated on no load, partial load and full load ( in steps of 20 % from no load to full load) at site. Load shall be arranged by the supplier. Testing at site shall only be done on water load.	

ENGINE AND ALTERNATOR CONTROL PANEL

SNo	INDENTER'S REQUIREMENT	Compliance
1	Control panel for 415 V 3-phase, 50 Hz, 4 wire AC supply should have the following features & accessories.	
i	It should be mounted on the enclosure with hinged panel and will be wired up as per standard practice & approved by CPRL	
ii	It should be fabricated out of CRCA sheet duly processed in 7 stages, dust proof, vermin proof & powder coated.	
iii	The Alternator panel is to be provided with necessary MCCB's / contactors & adequate space for connecting outgoing & incoming cables up to 300 sq mm 3 ½ core Al. conductor armoured cables. The rating of MCCB's / contactors / relays will be suitable for 400 Amp with current setting 180 Amp and rating of interconnecting copper cables shall be suitable for taking at least 1.5 time the rated current. Under rated MCCB shall not be accepted. HYLAM SHEET SHOULD NOT BE USED.	
2.	The panel shall comprise of following Instruments : [All indication lamp and switch should be of reputed Make] (a) Start / stop switch with key, (b) Local/AMF control switch, (c) Frequency meter, (d) DC Voltmeter & Ammeter for battery charging, e) flash mounted Ac Voltmeter with selected switch f) Flash mounted AC ammeter with selected switch having a scale more than 20% above full load current; (g) KW meter, pf meter; (h) MCCB of suitable rating (i) Instrument fuses (j) Low oil pressure & high water temperature audio alarm (k) Priming pump starter (l) Hour meter (l) RPM meter (Tachometer) (m) KWH meter.	
3.	The panel shall comprise the following Indicators: [AE/LT] : [Should be of reputed Make] (a) Set ON (b) Load ON (c) AMF control (d) Low lubricating oil pressure (e) Over speed (f) High enclosure temperature.	
6.	Protection for Generator : (a) Earth fault protection through relay (b) Under voltage protection through relay (c) Under frequency protection through relay d) Over current protection (through MCCB/ACB release) (e) One set of fuses shall be provided for instruments & control circuit.	
7.	The engine local control panel should have the following features : (a) Start /Stop push button with key for local starting (b) Special switch on the local control panel providing locking in any of the three positions: i) Local; ii) AMF; iii) Off –No rotation at all. (c) A timer to ensure that the starter is not pressed for a long time. (d) A pressure switch to ensure that the starting motor is not energized when the generator is running. (e) Lubricant oil temperature gauge. (f) Hour cum tachometer. (g) Protection against the following : i) Engine over speed; ii) Low lubricant oil pressure iii) High cylinder head temperature (f) One set of audio and visual alarm for above.	

## AMF CONTROL PANEL

SNo.	INDENTER'S REQUIREMENT	Compliance
1.	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.	
2.	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 type with degree of protection IP 53 as per IS : 2147 : 1962.	
3.	<p>The AMF Control Panel shall have the following instruments :- [All switches/lamps Should be of reputed Make]</p> <p>(A) Microprocessor based system with RS 232 serial port with full duplex communication and composite meter for digital display of:</p> <ul style="list-style-type: none"> <li>i. Generator voltage / AC mains voltage;</li> <li>ii Generator current; iii Load current; iv Power Factor;</li> <li>v Frequency meter ; vi Energy Meter</li> </ul> <p>(B) Mode selector switch for setting the panel on any one position such as off or auto or manual or test</p> <p>(C) Engine On - Off ( Push button type)</p> <p>(D) HRC Fuses of suitable ratings</p> <p>(E) Rectangular aluminium bus bars (one number for each phase, neutral and earthing terminal) of adequate ratings duly colour coded with heat shrinkable PVC sleeves</p> <p>(F) Two MCCB's of suitable ratings ( one for DG set &amp; one for AC mains) with over load relay</p> <p>(G) Under voltage relay for mains</p> <p>(H) Three attempt engine start / engine cranking relay</p> <p>(I) On delay timer for load change over</p> <p>(J) On delay timer for engine shut off</p> <p>(K) Push button switch for ON and OFF operation</p> <p>(L) Pilot lamps three numbers for three phase DG sets</p> <p>(M) Battery charger complete with voltage regulator, float/ booster selector switch, on - off switch, voltmeter &amp; ammeter for charging the battery from the mains. This will be in addition to the battery charging alternator fitted on the engine instrument &amp; control MCBs</p> <p>(N) Five number-indicating lamps to indicate mains low voltage, load on mains, set running, load on set and battery charger on.</p> <p>(O) Audio visual alarm for low lubricating oil pressure, high water temperature ( for water cooled), high cylinder head temperature (for Water cooled), Start failure and DG over load.</p>	

**TECHNICAL SPECIFICATION FOR CANOPY FOR 250 KVA DG SET  
(ACOUSTICALLY TREATED ENCLOSURE)**

Sl.No	INDENTOR'S REQUIREMENT	Compliance / Confirmation by the Tenderer
1.	The Diesel Generator shall be provided with a suitable acoustic enclosure. The self contained, weather proof acoustic enclosure should be robust in design so that there is no need of civil work to be carried out for installation of DG set. Only high quality components and accessories should be used in fabrication of enclosures such as locking systems, neoprene bulb type gasket, dial type fuel gauge etc. Easy start and stop facility should be provided. External drain plug for diesel and lubricating oil for ease of routine maintenance should also be provided.	
2.	The enclosure should be made out cold rolled steel sheets which are duly surface treated for corrosion proof. High quality painting should be done for weather proof and long lasting finish.	
3.	Base frame shall be made of 5 mm thick sheet and bend to special section for maximum rigidity.	
4.	Side wall shall be fabricated from 1.6mm CRC sheet and filled with 100mm thick acoustic material having 96 gauge per cubic meter density which is then covered with fiber cloth / tissue paper and finally with perforated MS sheets.	
5.	The door shall be 75 mm thick fabricated from 1.6 mm CRC sheets and packed with acoustic material. Sealing should be done with neoprene rubber gaskets. Heavy duty lockable handle should be provided for easy access and security.	
6.	Roof shall be 65mm thick made out of 2.5mm thick CRC sheet welded to provide wrinkle free roof structure.	
7.	The DG chamber shall be fitted with internal lighting system for ease of maintenance.	
8.	The exhaust pipe shall be covered with glass wool and clad with aluminium sheet to avoid heating of DG chamber and to avoid excess heat in genset operational area. Air inlet and outlet space shall be provided with sound dampers.	
9.	Complete DG set with enclosure including engine should achieve a noise level of 75 dBA at a distance of 1 mtr from this set against reasonably quiet background with the enclosure.	

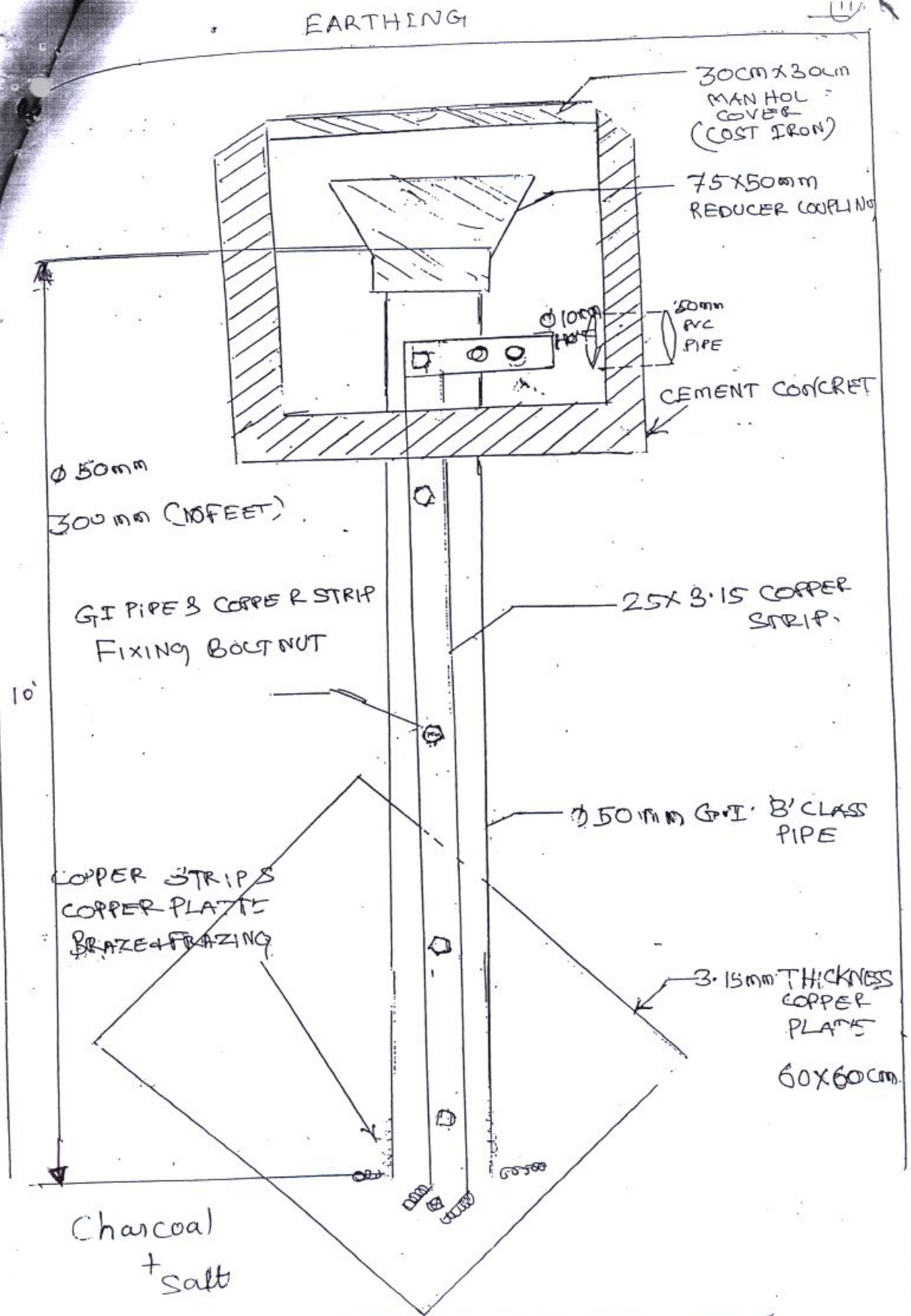
**SECTION IV****SCHEDULE OF REQUIREMENTS (Price Schedule)**

Sl.No.	DESCRIPTION	Qty	PRICE
1	Supply of 250 KVA Diesel Generator set, 415 V, 3 phase, 4 wire, 50 Hz as per Doordarshan specification No. DG 3/ 2002 complete with accessories including AMF control panel, fuel tank (part of the chassis) and self contained weather proof acoustic enclosure on ready to use basis.	1 no To be installed at DDK CHENNAI	
2	Supply & laying of 3 ½ core, 300 sq.mm aluminium cable from DG set to main LT panel of the Kendra (Rate per mtr length to be quoted)	Actual requirement	
3	Supply and laying of suitable multi core copper conductor, control cable in ground for AMF operation and AMF control panel and for visual indications in Transmitter Hall of the Kendra. (Rate per mtr length to be quoted)	Actual requirement	
4	Cu strips for earthing (Rate per mtr length to be quoted) from earth pit to DG Set	50 mtrs approx.	
5	Providing earth pits with man hole covers outside the building for chassis and panel earthing. [as per the enclosed drawing]	4 sets	
6	Supply of fuel (HSD) and lubricating oil during testing of DG set for 24 hrs at site	One job	
7	Cost of AMF Panel	1 set	
8	Installation, Testing & Commissioning of the above DG sets including transportation and unloading at the sites	One job for each site	

**OPTIONAL ITEMS**

Sl.No.	DESCRIPTION	Qty	PRICE
1	Spares required for operation of the DG Set for 2 years (list of spares to be enclosed)	Actual requirement	
2	Standard tools including special tools required for the maintenance and repair of Diesel Generator [list of tools to be enclosed]	Actual requirement	

# EARTH PIT DRAWING



**GENERAL TERMS AND CONDITIONS FOR WORK ORDER**

1. NAME OF PURCHASER : The President of India
2. PAYING AUTHORITY : The Chief Engineer(SZ)  
All India Radio & Television  
Swami Sivananda Salai,  
Chennai-600 005.

**3. PAYMENT TERMS:**

- (i) 80 % of the contract price for the equipments/materials inclusive of excise duty and Sales tax shall be paid on initial inspection and delivery of equipments at site in good condition.
- (ii) 20 % of the contract price for equipments and 100 % of installation charges on satisfactory completion of installation, commissioning and handing over.

**4. BILLS:**

All the supplies and works shall be in conformity with the order and all the part bill shall be prepared in quadruplicate in the same format as that of the order. All those part bills shall be submitted to the consignee for necessary certificates and onward transmission to the paying authority.

**5. SECURITY DEPOSIT:**

The contractor shall furnish the security deposit with in 2 weeks of placement of order at the rate of 10 % of the contract value subject to a maximum of Rs. 5 Lakhs at the time of signing the contract.

The security deposit shall be furnished in favour of "The Chief Engineer (South Zone) AIR & TV, Chennai-5" in any one of the forms mentioned below.

- a) Cash in full (b) DD Payable at Chennai (c) Bank Guarantee from any Nationalized Bank valid upto the end of warranty period as per contract. The warranty period starts from the date after completion of the SITC work and taking over.(Not from the date of supply of DG and Standard Control Panel set).

The EMD received will be returned after receipt of S.D. The security Deposit shall be refunded in full on completion of successful guarantee/Warranty.

**6. DESPATCH INSTRUCTIONS:**

The packing and marking of goods shall be as laid down in clause-12 of general conditions of contract DGS & D 69 (Revised).

- a) The contractor shall arrange to dispatch the goods duly insured direct to the consignee after prior intimation for delivery at site by whichever mode of transport he may choose, to ensure safe delivery of goods at site. Un loading shall be done at site at the contractor's Expense. Only storage space will be provided by the consignee. The contractor will provide his own security like locking etc and store the materials at his own risk.

b) The contractor must submit his challans in triplicate to the consignee sufficiently in advance of the actual arrival of the stores at the destination failing which he will be held responsible for any subsequent discrepancies between the actual receipt and the material detailed in the challan received later. The challan must also contain the following informations:

1. Brief description of stores.
2. Railway/ Lorry Receipt No. & Date.
3. Supply order No. & Date.
4. Inspection note No. & Date

c) The consignment received at site shall be opened and checked for Shortages/damages by the contractor himself. He shall show all the Materials received at site to the consignee to enable him to certify Receipt of stores in good condition. However, in exceptional circumstances, the contractor may request the consignee to check the consignment on his behalf. In such cases the consignee shall notify the contractor of the shortage/damages immediately on receipt of consignment at site. Expenses incurred, if any, in any, in checking the consignments shall be debitible to the contractor's account.

## **7. INSPECTION:**

### **a) SCOPE OF INSPECTION:**

#### **i) PRE INSPECTION:**

Manufacturers / Contractors must satisfy themselves that the stores are in accordance with the terms of the contract and fully conform to the required specification by carrying out thorough pre-inspection of each lot before actually tendering the same for inspection to the inspecting officer nominated under the terms of the contract. A declaration by the contractor the necessary pre-inspection has been carried out on the stores tendered shall be submitting along with the challan. The declaration will also indicate the method followed in carrying out pre-inspection showing the features checked, tested and will have the certificates attached to the challan/declaration. If the Inspecting officer finds that pre-inspection of the consignment' as required above has not been carried out the consignment is liable for rejection.

#### **ii) INITIAL INSPECTION:**

All the supplies including fabricated items and bought out items shall be inspected before actual inspection. The place of inspection shall be as at below. Also the installation at the site shall be inspected periodically during installation. If the inspecting officer finds initial inspection that the supplies are not according to specification, the suppliers are liable for rejection. The purchaser may at his discretion waive initial inspection in respect of those supplies which bear ISI certificates or manufacturer's test certificates. The contract shall approach the inspecting officer for inspection at least two weeks in advance of the actual date of inspection. All arrangements for inspection shall be made by the contractor. Any deviation in stores after initial acceptance by the Inspector and their receipt by the consignee shall be to the account of the contractor. The contractor shall forward the relevant copies of the inspection certificates of the stores to the consignee along with delivery challan.

**iii) FINAL INSPECTION:**

The entire installation shall be inspected by the inspecting officer on completion of Installation, commissioning and Complete work at the project.

**INSPECTING OFFICER:** Consignee or Nominees of the ADG(E) (SZ) /I.O. at Site.

**8. INSURANCE:-**

The contractor shall arrange for the insurance covering the risk during transit, Storage and installation till commissioning. All the charges for such insurance shall be borne by the contractor.

**9. ADDITIONAL QUANTITIES:-**

The purchaser reserves the right to place order for additional quantity upto 100% of the ordered quantity at the same rates and terms and condition during the currency of the contract.

**10. PENALTY FOR DELAY:-**

If the contractor is unable to complete the supply, installation, testing and commissioning within the stipulated time limit the purchaser may at his option allow such additional time as may considered justified with/without penalty and without altering terms and conditions of the order. In the event of failure of the contractor to complete the supply, installation testing and commissioning within the stipulated time or the extended time, the purchaser has the right to impose penalty of Rs.350/- per week or part thereof for every Rs.1,00,000/- of the total contract price. The contractor's liability for delay, however, shall not exceed 5% of the total contract price.

**11. GUARANTEE / WARRANTY:-**

The contractor shall accept clause-18 of the Form No. DGS & D-71 with exception that his obligation shall be limited for a period of 24 months from the date of taking over completion of the successful performance excluding down time during which the equipment was not working satisfactorily due to defective parts, faulty material/design/workmanship or fault erection. During the guarantee period the contractor shall repair or replace free of charge any parts that will become defective due to faulty material design, workmanship or erection.

**12. CONDITIONS OF CONTRACT:-**

DGS & D-68 (Revised and DGS & D-71 as amended upto date. However, Such of these conditions stipulated on this tender shall supercede corresponding conditions in DGS & D-71. The contractor shall sign a contract agreement form in triplicate in the prescribed Proforma and submit the same alongwith Security Deposit within 15 days. The complete form with the purchaser's signature shall be sent back to the contractor. No supplies will be made and no work shall start unless the agreement is signed by the contractor and the purchaser.

**13. SPECIAL CONDITIONS:-**

In addition to the terms and conditions contained in the general conditions of contract DGS & D-68 (Revised and DGS & D-71, the contract would also be governed by the following special conditions:-

- i) In case where only a portion of the stores ordered is tendered for inspection at the fag end of the delivery period the purchaser reserves the right to cancel the balance quantity not found acceptable after carrying out the inspection at the risk and expense of the contractor. If however, the stores tendered for inspection are

found acceptable the purchaser may grant an extension of the delivery period subject to the following conditions:-

- (a) That no increase in price on account of any statutory increase in or fresh imposition of customs duty, excise duty, sales tax or on account of any other tax or duty leviable in respect of the stores specified in the acceptance of tender shall be admissible on such of the stores as are delivered after the expiry of the delivery period stipulated in the A/T.
  - (b) That notwithstanding any stipulation in the contract for increase in price or any other grounds no such increase which takes place after the date of delivery stipulated in the A/T. shall be admissible on such of the stores as are ordered after the expiry of the delivery period stipulated in the A/T.
  - (c) But, nevertheless the purchaser shall be entitled to the benefit of any decrease in price on account of reduction in or remission of customs duty, excise duty, sales tax on account of any other ground stipulated in the price of variation clause which takes place after the expiry of the date of delivery stipulated in the A/T.
  - (d) The contractor shall not dispatch the stores till such time extension in delivery period is granted by the purchaser and accepted by the supplier before and extension letter as aforesaid is issued by the purchaser, the same are deemed to be subject to the conditions set out in preceding paragraph.
- ii) In case where the entire quantity has not been tendered for inspection within the delivery period stipulated in the A/T and the purchaser chooses to grant an extension of delivery period, the same would be subject to conditions mentioned in (i) above.
  - iii) The contractor shall refund any advance/part payment issued to him in respect of the rejected stores within 14 days of the receipt of intimation from the consignee about the rejection of such prices. This is strictly without prejudice and in addition to the rights provided in the clause-17 (8) of form DGS & D-67.
  - iv) The contractor is required to replace the rejected stores forthwith but in any event not later than a period of 14 days from the date of rejection and the contractor shall bear all the costs of such replacement including freight, if any but without being entitled to any extra payment or any other account.
  - v) Where under the contract, price payable is fixed F.O.R. dispatching station, the contractor shall, if the stores are rejected at destination by the Consignee, be able to, in addition to his other liabilities (including refund of price recoverable in respect of the stores rejected) to reimburse to the purchaser the freight and all other expenses.

#### **14. ENFORCEMENT OF LABOUR LAWS:-**

While engaging labour for carrying out obligations under the contract the contractor shall satisfy the conditions laid down under contract labour (Regulation and Audition) Act 1970 and (Central) Rules 1971 as amended from time to time and observe all formalities required as per said Act/Rules. The supplier shall also observe the provision under minimum wages act 1948 (Central) Rules 1950 amended from time to time while engaging labour.

**15. FORCE MAJURE:-**

If any time during the continuance of the contract the performance in whole or in part by the contractor shall be prevented or delayed by reason of any war, hostility acts of the public enemy. Civil commotion, Sabotage, fires, floods, explosions, epidemics, Quarantine restrictions, strikes, lock-outs or acts of God (therein after restrictions refer to as events and provided notice of happenings of any such eventuality is given by the contractor within 21 days from the date of occurrence thereof, the purchaser shall by reason of such event, neither he entitled to cancel this order nor shall have any claim for damages against the contractor in respect of such non-performance or delay in performance and delivery shall be resumed as soon and practicable after such events have come to an end or ceased to exist. Provided further that if the performance in whole or part or any obligation under this order is prevented or delayed by reasons of any such event for a period exceeding 180 days, the purchaser and the contractor shall meet to find a natural agreement to any effect resulting the reform or the purchaser may at his option cancel order provided also that if the order is cancelled the order provided also that if the order is cancelled under this clause, the purchaser shall be at liberty to take over from the contractor at order prices all unused, un-damaged and acceptable material bought out components and stores in course of manufacture in the possession of the supplier at the time of such cancellation or such portion thereof as the purchaser may deem fit accepting such material, bought out components and stores as the supplier may with the concurrence of the purchaser elect to retain.

**16. TECHNICAL MANUALS & DRAWINGS**

Contractor shall furnish six copies of comprehensive technical manuals for use by the operation staff. Such manuals shall contain instructions from the preventive as well as routine maintenance of the plant. The contractor shall also furnish copies of approved wiring diagrams, schematics, etc., for various items equipment.

**17. CANCELLATION:**

The purchaser reserves the right to cancel the order in the event of non-performance or unsatisfactory performance by the contractor and recover payment already made if any, along with losses/damages incurred.

**(M.SUJATHA)**  
**Assistant Engineer**  
**for ADG(E) (SZ)**