

BIDDING DOCUMENT

TENDER NOTICE No.: 16/2012-13/D.G SET/IGIMS/ STORE

DEPARTMENT: ENGINEERING SECTION

NAME OF THE EQUIPMENT:

- I. 200 KVA DIESEL GENERATING SET with
ACCOUSTIC ENCLOSURE

Bidding Document No.:	
Sl. No:-	
Issued to:	
Cost of Document:	
Paid By: Cash:	Receipt No.:
Demand Draft:	No.:
	Issuing Bank:
(Authorized Signatory)	

**INDIRA GANDHI INSTITUTE OF MEDICAL SCIENCES,
SHEIKHPURA, PATNA - 800014.**

INDEX

Sr. No.	Description	Page No.
01.	INSTRUCTION TO BIDDER	3 -10
02.	CONDITION OF THE CONTRACT	11-14
03.	SCHEDULE OF THE REQUIREMENT	16
04.	SPECIFICATION AND ALLIED TECHNICAL DETAILS WITH LIST OF APPROVED MAKES.	17 -26

IMPORTANT DATES

Last date for submission of Bidding Document	21 days from the date of publication of this tender up to 4 .00 PM
Date of opening of Bidding Document	

CHAPTER – 1
INSTRUCTION TO BIDDER

INSTRUCTION TO BIDDER

1. For the equipments to be purchased against this tender, bids are to be submitted in two parts as under.
 - a. **Technical bid** consisting of all technical details along with commercial terms and Conditions;
and
 - b. **Financial bid** indicating item-wise price for the items mentioned in the technical bid.

The technical bid and the financial bid should be sealed by the bidder in separate covers duly superscribed and both these sealed covers are to be put in a bigger cover which should also be sealed and dully superscribed. The technical bids are to be opened first by the “Technical Evaluation Committee” of the institute. At the second stage, financial bids of only the technically acceptable offers will be opened by the “Price Evaluation Committee” of the institute for further evaluation and ranking before awarding the contract.

2. Quantity of items may increase. The. Director, I.G.I.M.S. - Patna reserves the rights to Purchase different sub items/ Components of items from different bidders.
3. The “**Bidding Document**” may be downloaded from **institute website www.igims.org**. In case, downloaded bidding document is used, bidder(s) have to submit the cost of the Tender Document Rs. 5000/- (Five thousand – Non refundable) in the way of DD alongwith the complete documents in the form of D.D. in favour of Director, I.G.I.M.S. – Patna towards cost of the “Tender documents”. Firm is required to attach separate D.D. for the same in a separate envelope superscribed with “**Cost of Bidding Document**”. If the cost of tender document is not submitted by the bidder(s), his offer shall be outright rejected.
4. **Last date for submission of bidding document is 21 days from the date of publication of this tender till 4:00 PM.** by registered post / speed post/courier in the office of the Director, IGIMS, Patna-14. Bidder(s) are requested to send the bid well in advance so as to ensure that bid reaches in time. Institute will not be responsible for any postal delay. Bids received after due date and time shall be summarily rejected.
5. **Tender will be opened on _____ at 4:00 PM in** the office of the Director, I.G.I.M.S. – Patna in presence of bidder(s), who may like to be present.
6. Earnest Money @ 2% of the cost of equipment is required to be submitted along with tender by D.D. favoring Director, I.G.I.M.S. - Patna. Tenderer may quote more than one/several models. In such a situation EMD will be payable on the basis of highest priced model.
7. EMD of the unsuccessful bidders will be returned to them at the earliest after expiry of final bid validity and latest on or before the 30th day after the award of the contract.
8. EMD must be submitted in separate sealed envelope and endorsement of the same with DD number, date and its validity period be made with technical bids stating the same has

Bidding document DGS
been complied with price bid. If same is later found not enclosed tender will be cancelled for the party.

9. The Director reserves the right to accept or reject any or all the quotations without assigning any reason.
10. Bidder(s) should mention the DGS & D registration, if registered, and attach photocopy of DGS & D registration certificate Photocopy of Income tax & sales tax clearance certificate should be enclosed.
11. For Imported Goods, Indian Agency Commission must be declared in financial bid.
12. The Bidder's shall have to submit the following documents (Certified by Notary) with technical bid :-
 - a. User List (List of Govt/ Semi Govt. , Reputed Pvt. Hospital and other reputed places) where quoted items has been supplied and Installed.
 - b. Supply order (Minimum three no. or more issued by Govt./Semi Govt./Reputed Pvt. Institutions/organization for the quoted items.
 - c. Performance certificate of the same supplied machine(of quoted make and Model) issued by Head of the deptt. or Institution. After a minimum period of six months of Installation. .
 - d. Prerequisite (if any) for Installation of the Machine to be provided by the Institute
13. **Installation & site plan:**

Requirement regarding site/location for installation of equipment, if any, should be mentioned in the tender. Time required for installation of system after delivery must be mentioned. In case of delay in installation institute will have right to charge liquidated damage.

Specify the following points for installation of the System.:-

 - a. Total power consumption along with break up of main System and Accessories.
 - b. Whether the System needs uninterrupted power supply.
 - c. Maximum tolerated transfer time in case of interruption of power supply.
 - d. Whether the System needs any humidity control device.
 - e. Whether the System needs any separate power line/isolation Transformer.
 - f. Does the System need the electrical shielding?
 - g. Whether Air Conditioner is required for the System.
 - h. Does it require special civil works for installation?
14. Bidder(s) should also quote separately for Annual Maintenance Contract (with and without spare parts) per year for further period of seven years after the expiry of warranty period of Three years. There should be TWELVE monthly preventive maintenance visits per year along with all breakdown calls as and when required. All the breakdown of the items / systems is to be attended by the bidder(s) within 24 hours. Further, bidder(s) have to submit price list of all the major spare parts (written as well as in compact disc, if possible) required for usual maintenance of the supplied System along with the bid.
15. Firm have to provide a minimum **UPTIME GUARANTEE** of 95% (95% of 365 Days) per year during the warranty period as well as during the Comprehensive Annual Maintenance Contract / Annual Maintenance Contract.
16. While calculating the total unit price of the item / system to be procured , expenditure to be incurred in maintenance of the quoted item / system including all spare parts for a total period of seven years after expiry of the warranty period of three years shall also be taken into consideration. Accordingly, it is mandatory for the bidders to submit the rate for Annual Maintenance Contract / Comprehensive Annual Maintenance Contract

Bidding document (with spares) for a minimum period of seven years after the expiry of warranty period of three years.

The tenderer shall also have to submit whether periodic replacement of consumable items are required for proper functioning of their quoted machine/Equipment? If yes they should submit the list of such consumables along with price list and frequency of Replacement per year

17. Supplier will ensure uninterrupted supply of spares during life span of the equipments.
18. Indian agency commission and Installation charge if any will be paid in Indian rupees after successful demonstration and installation of the equipments.
19. Principal's Invoice of the quoted items must be submitted with the quotations.
20. Proof of the official Indian agent certificate of the firm must be attached. (Notary Certified Photocopy)
21. In order to fully and optimally utilize the equipment, training for maintenance of the machine and the sub systems should also be given to the "Equipment Maintenance Engineer" and "Equipment Maintenance Technicians". All the financial commitments in this regard shall be met by the bidder(s).
22. Bidder(s) have to submit an affidavit to the effect that they have not supplied the offered item(s) to any Govt. / Pvt. Organization, Institution, Nursing Home etc. at the price lower than the price offered to I.G.I.M.S. – Patna.
23. Bidder(s) should submit notary certified copy of the Supply Orders (two or more) of reputed Institution / Organization issued in his favour for the supply of the item(s) offered to I.G.I.M.S. – Patna.
24. All the claims regarding meeting of the specifications shall be duly supported by appropriate, latest technical catalogues/brochures from the manufacturer. Simply stating that the equipment(s) meets the specifications is not sufficient and any such quotations will be summarily rejected. Computer printed documents or Photostat copy or laser printouts will not be accepted as technical catalogues / brochures.
25. Tenderer might be required to demonstrate the system at the discretion of the institute.
26. The Director reserves the right to modify, add or delete any terms & conditions of the contract as and when required.
27. Not more than one tender shall be submitted by the tenderer for the same work. Further, no two or more concerns in which an individual is interested, as proprietor and/or partner shall tender for the same work. Proprietary firm Partnership firms or companies tendering for the work must be registered under the relevant law and proof of the same must be attached with the tender, Tenders from partnership firms must be signed by all the partners and, in the event of the absence of a partner, by an authorized person holding the power of attorney, photo-copy of which must be attached with the tender. Tenders from companies must be signed by persons authorized to do so on behalf of the company and photocopies of the relevant resolution and extract from the Articles of Association of the Company must be attached with the tender.
28. Rates must be quoted for complete work at site inclusive of all costs, taxes and charges etc. All taxes and duties such as Sales Tax on works contract as applicable in Bihar State, Central or State Sales Tax, Customs Duty, Excise Duty, Countervailing Duty, Octroi, Royalists etc. on works and materials required for use in the execution of this project

- shall be entirely borne and payable by the Contractor and Institute will not entertain any claim whatsoever in this respect.
29. Tender would be liable to rejection on account of canvassing or other malpractice in any form; any imposed conditionality by the tenderer; incomplete tender or non-compliance with any provision of the Notice of invitation to tender or of instructions to tenderers.
 30. The tenderer shall examine carefully all the tender documents, which shall form part of the agreement.
 31. The tenderer is advised to visit and inspect the site at his own cost and responsibility and to secure all necessary information, which may be required for completing the tender. Ignorance of site conditions or local information shall not be considered as an excuse for non-performance or defective performance or delayed performance of the contract. All costs, charges and expenses that may be incurred by the tenderer in connection with the preparation of his tender shall be borne by him and the Institute do not accept any liability whatsoever in this regard.
 32. Time is the essence of the contract and the tenderers are required to complete the work in all respects within the stipulated time of completion and hand over the same complete in all respects to the satisfaction of the Director, IGIMS, Patna.
 33. Should a tenderer find discrepancies in, or omissions from the Tender Documents or should additional information or clarifications be required he shall at once notify the Director, IGIMS, Patna in writing where after an addendum will be issued, if necessary, in this regard, to all tenderers. Such enquiries shall be submitted atleast one week before the date fixed for the opening of tenders; no oral interpretations shall be made or be considered binding and all addenda shall be listed in the tender form and become part of the contract documents. Any time taken or spent in seeking and/or eliciting or additional information or clarification, etc. shall not have the effect or postponing the last date for receipt of tenders or any other time schedule.
 34. The tender should contain not only the rates but also the value of each item of work entered in the prescribed column of the B.O.Q. and all the items should be totaled up in order to show the aggregate value of the entire tender. The rates quoted by the tenderer should be expressed accurately both in word and figures so that there is no discrepancy. All corrections in the tender shall be duly attested by initials of the tenderers. Corrections, if not attested, may entail rejection of tender. The rates quoted by the tenderers in item rate tender will be basis (and not the amounts in case of discrepancies) in finalizing the tender.
 35. It shall be clearly understood that the rates quoted in the tender are to be for complete work at site as per instructions to tenderers, conditions of contract, specifications and drawings, addenda referred to therein and also for all such works as are necessary for the proper completion of the contract although specific mention thereof may not have been made in the specifications or drawings or tender documents. The rates shall be firm and shall not be subject to cost escalation on account of labour and material and, labour conditions or any other reason whatsoever, whether during the stipulated period of execution or during the extended period of completion if any.
 36. The tenderers shall use only the form issued with this tender to fill up the rates.
 37. Telegraphic offers will be treated as defective, invalid and rejected.
 38. Every page of the tender shall be signed in the left hand side bottom corner and any tender not so complied with is liable to be treated as defective.

39. Incomplete tender and tenders which propose any alteration in the work specified or which contain conditions of any sort, or which are not accompanied with the required earnest money will be liable to rejection.
40. The successful tenderer will be notified of the acceptance of his tender by the institute and he will have to deposit initial security and execute agreement within 30 (thirty) days thereof, failing which his tender would be liable to rejection with forfeiture of the earnest money.
41. The tender shall be accompanied with a covering letter listing all the enclosures and giving the name and addresses of business and residence of the tenderer.
42. The tenderer shall submit alongwith the tender a photocopy set of the priced bill of quantities, covering letter, and other enclosures which have a bearing on the evaluation of the tender.

43. **Extent of Contract:**

The contractor shall supply at his own cost all materials (except such special materials, if any, as may in accordance with the contract be supplied from the Institute's stores) plants, tools, appliances, implements, ladders, cordage, tackle, scaffolding, and temporary works requisite or proper for the proper execution of the work whether original, altered or substituted and whether included in the specification or other documents forming part of the contract or referred to in these conditions or not or which may be necessary for the purpose of satisfying or conditions he is entitled to be satisfied, which he is entitled to required together with carriage therefore to and from the work. The contractor shall also supply without charge the requisite number of persons with the means and materials necessary for the purpose of setting out works, and counting, weighing and assisting to the measurement or examination at any time and from time to time of the work materials, Failing his so doing, the same may be provided by the Director, IGIMS at the expense of the contractor and the expenses may be deducted from any money due to the contractor under the contract from his security deposit or the proceeds of sale thereof, or of a sufficient portion thereof. The contractor shall also provide all necessary fencing and lights required to protect the public from accident, and shall be bound to bear the expenses of defense of every suit, action or other proceeding at law that may be brought by any person for injury sustained owing to neglect of the above precautions, and to pay any damages and costs which may be awarded in any such suit, action or proceedings to any such person or which may with the consent of the contractor be paid to compromise any claim by any such person.

46. **Intent of Documents:**

The several documents forming the contract are to be taken as mutually explanatory and complementary to one another. Should there be any ambiguity, omission, discrepancy or error in the various documents/ drawings, the Director, IGIMS shall have power to correct the same and his decision shall be final and binding on the contractor, any error in description, quantity or rate, or any omission there from shall not vitiate the contract or release the contractor from the execution of the work.

47. **Inspection of Site:**

Tendering for the work shall mean that the contractor acknowledges that he has satisfied himself as to the nature and location of the works, the general and local conditions, particularly those bearing upon transportation, disposal, handling and storage of materials, availability of labor, water, electric power, roads, uncertainties of weather, or similar physical conditions at the site, the character of equipment and facilities needed preliminary to and during the execution of the work, any special measure required to

ensure non-interference with the Institute operations and all other matters which in any way affect the work or the cost thereof under this contract. Any failure of the available information will not relieve him of responsibility for estimating properly the difficulty or the cost of successful performance of the work. No extra charges consequent on any misunderstanding of otherwise shall be allowed.

48. **Sufficiency of Tender:**

The contractor shall be deemed to have satisfied himself before tendering as to the correctness and sufficiency of his tender for the work and of his prices stated in the schedule, which shall except in so far as it is otherwise provided in the contract, cover all his obligations under the contract and all matters and things necessary for the proper completion and maintenance of the work.

49. **Assignment:**

The contractor shall not assign the contract or any part thereof or any benefit or interest therein or there under or any claim arising out of the contract to any other party without the prior written consent of the Institute.

50. **Sub-Letting of work:**

The contract shall not be assigned or sublet without the written approval of the Director, IGIMS and if the contractor shall assign or sublet his contract, or attempt so to do, or become insolvent or commence any insolvency proceedings or make any composition with his creditors, or attempt to do so, or if any bribe, gratuity, gift, loan, perquisite, reward or advantage, pecuniary or otherwise, shall either directly or indirectly be given, promised, or offered by the contractor, or any of his servants or agents to any officer or person in the employ of Institute in any way relating to his office or employment, or if any such officer or person shall become in any way directly or indirectly interested in the contract, the Director, IGIMS may thereupon by notice in writing rescind the contract. The security deposit of the contractor shall thereupon stand forfeited and be absolutely at the disposal of Institute and the same consequences shall ensue as if the contract had been rescinded under clause 4.11 hereof, and in addition the contractor shall not be entitled to recover or be paid for any work therefore actually performed under the contract.

51. **Power to Make Alterations:**

- (i) Director, IGIMS, Patna shall have power to make any alterations in or additions to the stipulated specifications, drawings, designs, and instructions that may appear to him to be necessary or advisable during the progress of the work and the contractor shall have no claim for compensation on account of such alteration or addition. The contractor shall be bound to carry out the work in accordance with any instructions which may be given to him in writing signed by the Director, IGIMS and such alteration shall not invalidate the contract, and any additional work which the contractor may be directed to do in the manner above specified as part of the work shall be carried out by the contractor on the same conditions in all respects on which he agreed to do the main work and at the same rates as are specified in the tender for the main work. The time for the completion of the work shall be extended in the proportion that the additional work bears to the original contract work and the certificate of the Director charge shall be conclusive as to such proportion.
- (ii) If, at any time after the commencement of work, the Institute shall, for any reason whatsoever, not require the whole thereof as specified in the tender to be carried out the Director, IGIMS shall give notice in writing of the fact to the

Bidding docunt.DGset contractor who shall have no claim for compensation on this account on any ground whatsoever.

52. **Care of Site:**

The contractor shall at all times during the execution of the works maintain the site and working area free from all surplus materials rubbish and offensive matter all of which shall be disposed of in a manner to be approved by the Director, IGIMS on the completion of the works the contractor shall clear away and remove from the site all constructional plant, surplus materials, rubbish and temporary works in a manner to be approved by the Director, IGIMS and leave the whole of the site and works clean and in good conditions to the satisfactory of the Director, IGIMS.

53. **Care of works:**

The contractor shall take full responsibility for the care of works and all temporary works from commencement till the issue of the certificate of completion and in case any damage or loss shall happen to the works or to any part thereof from any cause whatsoever the contractor shall repair and make good the same at his own cost so that on completion of the works they shall be in a good order and in conformity with the requirements of the contract. The contractor shall also be liable for any damage to the works necessitated in the course of any operations carried out by him for the purpose of complying with his obligations under maintenance and guarantee.

54. **Contractor's Office and Stores:**

All offices, sheds and stores required by the contractor shall be erected at his own cost with the prior approval of the Director, IGIMS and shall be dismantled and removed within 15 days of the order of the Director, IGIMS to this effect.

55. All works to be executed under the contract shall be subject to approval of the Director, IGIMS and other officers authorized by Director, IGIMS, who shall be entitled to direct at what point or points and in what manner they are to be commenced and from time to time carried on.

57. **Electricity and Water Charges:**

i) The contractor shall make own arrangement and pay the expenses for obtaining service connection for electricity required for the construction work and shall pay all the electricity charges thereof.

In case electricity required for the construction work is supplied by the Institute, charges of electric power used shall be paid by the contractor to the Institute at rates fixed by the Director, IGIMS, However, the contractor should maintain the installation at his own cost, and under his supervision.

ii) The contractor shall make his own arrangement and pay the expenses for obtaining water for construction, drinking and for other purposes and shall install and maintain the services at his own cost.

In case water required for the construction work is taken from the water supply system source of the Institute, charges will be paid by the contractor to the Institute at rates fixed by the Director, IGIMS, Patna.

CHAPTER – 2
CONDITIONS OF THE CONTRACT

CONDITIONS OF THE CONTRACT

- 01. Duty Free Clearance, Transportation, Forwarding & Handling Charges:**
Clearance charges at point of Entry / Air Port and on ward transportation charges with Insurance upto I.G.I.M.S. - Patna will be borne by supplier's Indian Agent for which this Institute will not pay the charges.
- 02. Demurrage. Taxes & Octroi :**
No demurrage charges will be paid by the Institute in case of delay on the part of supplier. However, this Institute will provide all necessary documents required for clearance / transportation of the goods and for exemption of the taxes/octroi for which supplier/Indian agent will have to intimate/furnish his requisition of document required, if any, well in advance. Octroi will be payable by supplier / Indian agent, if required.
- 03. Warranty Period:**
Three Years (with all spares) from the date of successful Installation and commissioning of the Diesel Generating set with acoustic enclosure. During the warrantee period of the equipment, the service Engineer of the supplier will attend the complaint of Institute within 24 hours of the receipt of the information (by telephone, fax, e-mail etc.), otherwise Institute will recover the losses incurred on account of breakdown of equipment. Apart from above, Service Engineer / Service technician will have to provide twelve nos. of maintenance visits per year during warranty period for usual maintenance and supervision. Firm is also required to quote their rate for extended warranty for additional seven (i.e. a total period of ten years from the date of the successful installation and commissioning) of the offered system.
- 04. After Sales Services: -**
After expiry of the warrantee/Guarantee period of the equipment, the Indian agent will have to undertake the Annual Service/Maintenance contract (with and without spare parts) of the supplied equipment at the discretion of the Institute for the life span of equipment. The life span of the equipment shall not be less than fifteen years. During the Comprehensive / Non-Comprehensive Annual Maintenance Contract, supplier will have to provide atleast twelve maintenance visits per year for usual maintenance and supervision and also attend all the breakdown calls within 24 hours of the receipt of the information (by telephone, fax, e-mail etc.), otherwise Institute will recover the losses incurred on account of breakdown of equipment. To ensure due performance of the contract, "**Performance Security**" is to be submitted by the supplier in the form of Bank Guarantee of the amount of 10% of the Comprehensive / Non-Comprehensive Annual Maintenance Contract amount per year. "**Performance Security**" shall remain valid for a period of sixty days beyond the date of completion of all contractual obligations of the supplier.
- An undertaking of the principal regarding continuity of after sales and services (CAMC) @ the agreement rate even in case of changes of Indian agent during the life span of the equipment, must be enclosed.
Location of service centre from where after sale services shall be provided should also clearly be mentioned alongwith staff strength.
- 05. Delivery period/Liquidated Damage: -**

Bidding docunt.DGset Goods should be delivered within two months after receipt of irrevocable and confirmed Letter of Credit. If the delivery is not effected by due date, the Director, I.G.I.M.S. - Patna shall have the right to charge liquidated damage on supplier/his Indian agent as under:-

- I. 1st extension for month or a part thereof @ 2% per month of C.I.F. value.
- II. 2nd extension for an additional month or a part thereof @ 3% per month of C.I.F. value subject to maximum Limit of 20% of the order items. All expenses incurred for extension of L.C. will be borne by supplier/his Indian agent.

06. Payment: -

- a. 100% payment through International Irrevocable **Letter of Credit** in favour of principal abroad, but 90% will be released on shipment of goods & 10% after satisfactory installation of equipment.
- b. Bank Guarantee of value not less than 20% of the cost of the equipment (with a minimum validity to cover up the warranty / guarantee period) will be submitted by supplier. This Bank Guarantee will be released after expiry of guarantee period.
- c. In case, the equipment is purchased in Indian Currency then the payment will be made as per following scheduled.:
 - i. 90% payment will be released against delivery and successful installation of the equipment & balance 10% after expiry of warranty/guarantee period.

OR

- ii. 100% will be made against delivery and successful installation of the equipment and on submission of Bank Guarantee of value not less than the 10% of the cost of the equipment with a validity to cover up the warranty / guarantee period. This Bank Guarantee will be released after expiry of guarantee period.

L/C will be opened only after receipt of confirmation letter of all our terms and condition, submission of agency certificate in favour of Indian agent who have submitted and quoted the price, name of the Bankers abroad; intimation about country of origin and 10 copies of Performa invoice of the ordered item. Indian Agency commission will be paid in Indian currency only to Indian agent, if any. No extra charges will be paid for installation/demonstration and training to personnel.

Validity of Price:- Preferably up to 90 days from the date of opening of tender.

07. **Part Supply:** No part supply/ wrong supply or short supply will be accepted by the Institute. The Director IGIMS, Patna will be the final authority and will have the right to reject full or any part of supply, which is contradictory to the terms and conditions agreed at the time of placement of order. In case of rejection of any supplied items due to nonconformity in quantity and/or quality, Institute will have right to charge liquidated damages, as it deems fit.

08. Packing & Marking:

Goods must be securely and adequately packed and protected in order to prevent damage, otherwise all losses and /or damage resulting from inadequate packing and/or inadequate protection or inadequate marking shall be borne by seller/seller's Principal abroad.

09. Supplier will have to provide required manpower for running the equipments at mutually agreed remuneration (Which shall not be more than remuneration

Bidding documt.DGset payable for the particular category of staff at IGIMS) at the sole discretion of the Institute, till institute is able to arrange its own staff for the purpose.

10. **Insurance:-**Insurance at Patna will be borne/arranged by principal supplier/his Indian Agent.
11. **Installation & site plan:**
Requirement regarding site/location for installation of equipment, if any, should be mentioned in the tender. Time required for installation of system after delivery must be mentioned. In case of delay in installation institute will have right to charge liquidated damage.
Specify the following points for installation of the System:-
 - a. Total power consumption along with break up of main System and Accessories.
 - b. Whether the System needs uninterrupted power supply.
 - c. Maximum tolerated transfer time in case of interruption of power supply.
 - d. Whether the System needs any humidity control device.
 - e. Whether the System needs any separate power line/isolation Transformer.
 - f. Does the System need the electrical shielding?
 - g. Whether Air Conditioner is required for the System.
 - h. Does it require special civil works for installation?
12. **Responsibility:**
The principal as well as its agent will be severally and jointly responsible for ensuring the minimum life span of 10 years for the equipment. Both the said principal abroad and his Indian agent will have the full responsibility for the proper functioning of the equipment/instruments within the warranty period and thereafter during the life span of the equipment.
13. The bidder is required to provide list of persons (along with their permanent and correspondence address) owing more than 1% share ownership in the company/firm (both principle and Indian Agent).
14. The bidder is required to submit compliance sheet, which should reflect details of clause-by-clause compliance of technical specifications as well as general terms & conditions failing which their offer shall be rejected.

**Director
IGIMS - Patna.**

CHAPTER – 3

SCHEDULE OF THE REQUIREMENTS

**SCHEDULE OF QUANTITIES FOR PROVIDING 200KVA Diesel Generating set
TO
INDIRA GANDHI INSTITUTE OF MEDICAL SCIENCES: SHEIKHPURA:**

PATNA-800 014

<u>Sr. No</u>	<u>Description</u>	<u>Quantity</u>	<u>Rate</u>	<u>Unit</u>	<u>A m o u n t</u>
1	Supplying, installation testing and commissioning at site 200KVA capacity diesel generating set three phase 50Hzs, 415 volts with acoustic enclosures along with control panel, 2 x 12 volts battery of 25 plate - 180.amp-hrs, with battery charging unit – confirming to IS-4722, BS-500, IEC-34/1, ISO-8528, BS-5514, Iso-3046	One			

Note:- Quantity may increase

CHAPTER – 4

SPECIFICATION AND ALLIED TECHNICAL DETAILS LIST OF APPROVED MAKE

SPECIFICATION AND ALLIED TECHNICAL DETAILS

Scope of work is to supply, installation, testing and commissioning of about 200 KVA, 415 volts, 3phase, 50 HZ capacity Diesel Generator set, along with acoustic enclosure and AMF panel complete with all accessories and handing it over to the department thereafter.

2.1 Diesel engine

Engine shall conform to relevant IS/BS specifications and be complete with radiator (water cooled) and oil pump, diesel (fuel) tank, self starting motor, batteries of adequate ampere hour capacity for self starting, air, filters, exhaust piping with heavy duty. Domestic/residential silencer, flywheel, fuel and lubricant oil filters etc. The engine shall be capable of developing required BHP as per the manufacture recommendation for 200 at NTP conditions and at 1500 RPM. Speed regulation shall be such that from no load to full load KVA, the variation in speed is minimum, say within 5%. Engine shall have following instruments mounted on the engine control panel, besides the starting key and “start” and “Stop” push buttons.

- Oil Pressure Gauge
- Water Temperature Gauge
- Tacho Meter
- Hour Meter
- Energy meter

Diesel engine shall be of heavy duty type and shall be continuously rated. The capacity of the diesel oil tank shall be sufficient for atleast 8 hours full loaded operation complete with fuel level indicator, filler cap, drain valve etc. the intending tenderers shall indicate the make and all the details of the engines they propose to offer, including fuel consumption per hour at full load at various part loads.

The following safety devices shall be incorporated in the engine.

- Radiator water high temperature cut-out.
- Oil pressure failure cut-out.
- Cooling water circulation failure cut-out with a time delay.

2.2 Alternator-

The alternator shall conform to IS/BS and shall be self excited and self compensated type, self ventilated in brushless type and designed for 415 volts, 50 Hz, 3 phase output at 1500 RPM, 200 KVA capacity of DG set at site conditions. The regulation shall not be more than 5% over the full load range including the 5% speed regulation of prime mover. The alternator shall be provided with electronic AVR as per manufacturer’s recommendation, directly coupled to the diesel engine through flexible coupling. The design shall be such that the harmonics are minimum. The power supply terminals including the neutral shall be brought out in a suitable cable entry box as directed. The Alternator shall have its winding star connected with neutral connection brought out to a separate terminal. The alternator shall fully comply with the latest standard IS/BS in respect of winding insulation and fast response to maintain steady voltage and shall give rated output voltage.

2.3 Base Plate

The diesel engine and the alternator shall be mounted on common base plated made out of suitable channel sections with welded joints. Suitable anti-vibration mountings shall be employed

Bidding document DG set
to prevent transmission of vibration to the structure to the maximum extent possible as per the manufacturer's recommendation.

2.4 AMF Power control panel –

This shall be designed for both automatic and manual operation on mains failure operation of the generator set. The panel shall be floor standing cubicle pattern, fabricated out of 16 gauge M.S. sheet treated with anticorrosion and painted with two coats of approved quality/shade synthetic enamel paint. The panel shall be complete with interconnections, insulators, 2 nos. Earthing lugs etc. The panel shall be so designed that in the case of main supply failure, the diesel engine and the generator shall be started and on checking the generator voltage and frequency make available the generator power to the essential loads. On restoration of main supply, the generator supply shall not be cut off immediately but after time lag of 45-60 seconds i.e. after stabilization of restored main supply and thereafter the engine shall be shut down automatically. If the engine fails to start after three attempts or fails to pick up rated speed, the engine starter shall trip automatically and there shall be an audio alarm to sound an unhealthy condition of the generator set. The panel shall have suitable circuitry incorporated therein for this purpose. The components used in the fabrication of the panel shall be of high quality/reliability and shall be of reputed make, the spares of which are readily available in the local market. The design, drawings and complete panel shall be got approved from the local electrical inspectorate and concern engineer in charge, if necessary. Two sets of operating manual and two sets of control circuit drawings of panel in laminated form shall be provided for the DG set. **Make should be approved by CPRI.** The panel fabricated as above shall incorporate the following accessories-

- a. The bus bar shall be of electrolytic grade tinned copper with a current density of 1.2 Amp. Per sq. mm.
- b. Full length copper earth bus shall be provided at the bottom of the panel.
- c. Digital flush type voltmeter 0-500 volt
- d. Voltmeter selector switch – OFF/R/Y/B/R
- e. Digital flush type ammeter -0-600 Amp.(minimum) with CTs.
- f. Ammeter selector switch – OFF/R/Y/B
- g. Suitable capacity HRC fuses for voltmeter.
- h. Digital frequency meter.
- i. Suitable Capacity 4 pole 415 V. 4 P SFU for mains supply and generator supply.
- j. 1 No. 3 phase 4 wire unbalanced type energy meter of suitable capacity with CTs.
- k. KW meter.
- l. Boost-cum-trickle battery charger consisting of transformer/rectifier, DC ammeter, DC voltmeter charging rate selector switch and protective fuses.
- m. Mains supply contactor of approved make and of adequate rating.
- n. DG set supply contactor of approved make and of adequate rating.
- o. Main supply voltage monitor with under/over voltage adjustable setting.
- p. Set of control relays of suitable capacity.
- q. Set of indicating lamps of group LED type with nameplates for mains supply and DG set supply.
- r. Indications for start failure, high temperature trip, low oil pressure, high temperature warning, battery low, load on generator, load on mains, common alarm for engine failure etc. with name plates.
- s. Push buttons for start, stop, reset/alarm acknowledge.
- t. Hooter with toggle switch for ON/OFF.
- u. Any other item necessary for proper functioning of the AMP power panel for desired purposes. The CTs, relays etc. shall be as per requirement.

2.5 Acoustic Enclosure –

The generating sets are housed inside a high quality acoustic enclosure having salient features & constructional features such as:

- Compact, modular construction and sleek design with low noise level (75-82 dBA) at a distance of 1 meter in open environment as per the latest CPCB recommendation.
- Adequate ventilation to be provided to meet the air requirements for combustion and heat removal. A ventilation fan/blower of adequate capacity to meet total air requirement and air change shall be provided.
- Soundproof, weatherproof, and environment friendly silent set.
- Ready-to-use silent set will be installed on foundation as per site requirement.
- The acoustic enclosure is manufactured, powder coated and lined with fire proof acoustic material light resin rock wool as per relevant IS. The material shall be of 96 Kg/m³ density and the layer shall be 100mm thick covered in the fiber glass sheet and perforate powder coated sheet.
- Made out of 2 mm thick CRCA sheet, compact sleek design conforming to international standards to meeting CPCB norms.
- Attenuators shall be placed in the hot air outlet and cooling air inlet.
- Exhaust silencer to be of hospital grade type mounted outside the enclosure, exhausting to atmosphere.
- All joints to be sealed with fireproof neoprene gaskets to withstand temperature and pressure at site conditions.
- All high temperature exposes surfaces to be insulated by glass wool with aluminum cladding up to the silencer.
- Painted with whether proof acid, acid-proof heat resistance, power coated after pre treatment for the degreasing, degusting, pickling, prospecting and passivation.
- Arrangements for illumination with 2 X 40 watts with required fixtures.
- In-built fuel tank to be provided with breather, drain plugs for filing and darning
- Diesel from outside the enclosures.
- The fuel level gauge to be provided visible from outside the enclosures.
- Drain plugs shall be provided outside the enclosures for draining mobile oil.
- Battery shall be provided in a tray inside the enclosure.
- Locking system for doors-Pressure locks from outside and bolts from inside.

2.6 Spares and Tools:

The tenderers shall separately quote (rate and quantities) for recommended list of essential spares required for both, the engines and alternators (including rectifier, etc) for normal operation. Similarly, the list of standard tools to be supplied along with the generating sets (without any extra cost) shall be furnished along with the tender.

2.7 Erection-

The scope of erection for the DG sets shall include for the supply and erection of the following.

- The acoustic enclosure shall be installed as per the technical details given above, on the foundation
- The A.M.F power control panel along with battery charging equipments shall be cubical, free standing, floor mounted type and shall be installed in a suitable place on foundation as per site requirement.
- Necessary cabling for connection of AMF panel and other accessories shall be laid including cable termination if required PCC cutting for the purpose of cable laying shall also be carried out by the Tenderer and the damages shall be made good without any additional cost.

2.8 FUEL TANK

A fuel tank of suitable capacity for 8 hours minimum working made of minimum 14 gauge steel fabrication duly painted and fitted with inlet, outlet connection, air vent, gauge meter, fuel filling arrangement with filler cap, drain valve plugged, spill return, fuel connection, fuel level indication and protections (Visual/Alarm)etc shall be provided with the DG set.

2.9 BATTERY AND BATTERY CHARGER

- The battery shall be heavy duty, chargeable lead acid sealed maintenance free (SMF) type suitable for at least 3 cold starts in quick succession complete with all leads, terminals and stand. Make of battery should be of approved make.
- The battery charger shall be complete with transformer, suitable rating (415 V, 3 PH, 50 HZ/230V, 1 IPH, 50 HZ) rectifier circuit, charge rate selector switch for “trickle”/“boost” charge, D.C. ammeter & voltmeter, annunciation panel for battery charge indication/loading/ failures.
- The charger shall float the battery at 2.15 V per cell and Boost Charge at 2.75 V per cell. The charger shall be able to charge a fully discharged battery to a state of full charge in 8 hours with 25% spare capacity. Manual control for coarse and fine voltage variation shall be provided. Float charger shall have built-in load limiting features.
- Static type single phase full wave bridge rectifier with ripple limiting to 5% to get smooth DC voltage shall be provided.
- Charger shall be provided with Output Voltmeter and Ammeter.

2.10 EXHAUST FLEXIBLE PIPE.

The engine shall be provided with exhaust manifold, flexible piping, silencer (RESIDENTIAL) and an exhaust carried to the top of the building with exhaust outlet at a level above the terrace as per the requirement of Central Pollution Control Board (CPCB) or Bihar State Pollution Control Board (BSPCB). Exhaust piping shall be fabricated from class “B” M.S Pipes size suitable to limit back pressure to within permissible limit including all supports and other accessories. Exhaust piping shall be connected to the engine by means of flexible section or an expansion joint and shall also be graded to drain pocket. The pocket shall be fitted with drain cock. Exhaust pipes will be painted with primer & two coats of heat resistant silver paint.

2.11 CONTROL PANEL

DG Controller complete with silent features:

- a) Display Parameters
 - I. Voltage + Frequency + KW+KWH+KVA+KVAR+PF
 - II. Running Hours + Maintenance Hours + Fuel Tank
- b) Mechanical Safeties
 - I. Under / Over speed
 - II. Low Oil Pressure
 - III. High Engine Coolant Temperature
 - IV. Low Coolant level
 - V. Low fuel Level (Alarm)
 - VI. High Canopy Temp.
- c) Electrical Safeties:
 - I. Under / Over Voltage
 - II. Under / Over Frequency

IV. Phase Sequence Reverses

V. Over current / Over KW

Alternator

The Alternator shall have the following characteristics

Rating: 200 KVA

Power factor: 0.8

Voltage: 415 volts

Frequency: 50Hz \pm 0.5

Type: Drip Proof Screen protected for power generation

Speed: 1500 R.P.M

Net Site Output: Rated continuous at ambient conditions as per schedule of variation

Voltage Regulation: +/-1% all load between no load to full load & factor 0.8 to unity

Electronic AVR Overload: More than 10% of the nominal for 1 hour in every 12 hours
without exceeding permissible temperature rise.

List of Approved Makes

1. Diesel generator set - Cummins/ Kirloskar
 - Engine - Cummins/ Kirloskar
 - Alternator - Stamford/ Kirloskar
2. AMF panel - Tricolite/ Unique Power Control/Neptune or any equivalent **make approved by CPRI**
3. Air Circuit Breaker - L & T/ Siemens/ ABB
4. Contactor - L & T/ Siemens/ HPL/ ABB
5. LED Indicator - L & T/ Siemens/ HPL/ Essen
6. Selector Switch - L & T/ Siemens/ Salzzer
7. MCCB - L & T/ Siemens/ ABB
8. MCB - Havells/ Standard/ Legrand
9. Meter - AE/ HPL/ Conzerv
10. M.S Pipe - TATA/ Jindal
11. G.I Pipe - TATA/ Jindal
12. Cable - Gloster/ National/ Finolex/ Polycab
13. Wire - Kalinga/ Havells/ Plaza/ Delton
14. Lugs - Dowells/ Electrical/ Siemens
15. Battery - Exide/ Panasonic/ Okaya / AMCO
16. Battery Charger - Tricolite/ Unique Power Control/ Advance or As per Manufacture Recommendation
17. Insulating material - Tycon/ as per IS standard
18. Tools - Taparia
19. CT"s - Kappa/ Pragathi/ ECS/ AE

Note:- For items mentioned at sl no. 3 to 19 , make of the items to be used should be of above – mentioned brand or equivalent similar standard product .

SCOPE OF WORK

The scope of work included following:

1. S/I/T/C of 200KVA salient DG set include all accessories items, protections, safety parameters, control panel, base frame with anti-vibration mount complete etc. as per specifications required at site and as per direction of Engineer in charge.
2. S/I/T/C of floor mounted totally enclosed sheet steel AMF panel suitable comprising of ACB for alternator and main supply will include all accessories bus bar fitting, instruments protection, control unit, MCB, Dial plates, control cables etc. As per specification requirement at site or as per the direction of the Engineer in charge.
3. Supplying, laying, testing, commissioning of 3.5 X 240 sq. mm, 1100 volt grade aluminum armoured XLPE insulated and sheathed aluminum conductor cable including cost of providing with proper clamps, identification tags/route marker on tray, wall/ceiling complete as required as per specifications at site or as per direction of Engineer in charge..
4. Supplying and making cable and termination with brass, compression glands and crimp aluminum lugs of 3.5 X 240 sq mm XLPE conductor cable of 1.1 KV grade complete etc. required at site as per direction of Engineer.
5. Supply Installation of 150 mm/300 mm width, 50 mm depth and 2mm thickness of perforated MS cable tray including horizontal and vertical bands, reducer, tees, cross members and other accessories as required and duly suspended from the ceiling/ wall with MS suspender and including painting etc. as required at site.
6. Supply installation testing commissioning of Exhaust piping with class BMS pipe from DG set at the ground floor to the building, terrace along the external wall including the cost, flexible joints, bands, pipe support along with the wall and above terrace label suitable for 200 KVA DG set, exhaust etc. complete as per specification as per required or as per direction of engineer in charge. 150 mm.
7. Supply & Fixing of Earthing with copper earth plate & GI earth plate i/c accessories and providing masonry enclosure with cover plate having locking arrangement and water pipe etc. i/c charcoal and salt for copper plate neutral of transfer electrodes etc. complete as per required specifications at site or as per direction of Engineer in charge..
8. Providing & fixing of 25mm X 5mm GI strip and copper strip in 40 mm dia GI pipe from earth electrodes as required.
9. Providing & fixing of 25mm X 5mm copper and GI strip on surface or in recess or connection as required.

TECHNICAL PARTICULARS

S.NO.	Item Description	200 KVA DG Set (offered)
01	Engine Make Model Number Type Type of cooling system Type of silencer Fuel tank capacity Shaft HP at 1500 RPM Type of Governor Fuel consumption at full load/hour	
02	Alternator Make Model Number Frame Size Rated Voltage Capacity in KVA Excitation % Regulation Type of Enclosures Class of insulation for winding	
03	Batteries Make Voltage Capacity in Amp. Hour Whether stand included or not	

Bidding docunt.DGset	
----------------------	--

04	<p>Coupling</p> <p>Type</p> <p>Whether guard provided or not</p> <p>Whether base plate is included or not</p>	
05	<ul style="list-style-type: none"> - Dia of exhaust Pipe - Thickness of exhaust Pipe - Thickness and type of - Exhaust pipe insulation 	
06	<p>List of tools normally supplied with the engine & alternator, free of cost. (Please enclose details in separate annexure)</p>	
07	<p>List of spares normally supplied along with the engine & alternator, free of cost. (Please enclose details in separate annexure)</p>	

Place:

Signature of Tenderer with seal

Date:
