



अखिल भारतीय आयुर्विज्ञान संस्थान,  
All India Institute of Medical Sciences  
Engineering Branch, Bhubaneswar (Odisha)-751019  
[www.aiimsbhubaneswar.edu.in](http://www.aiimsbhubaneswar.edu.in)

## **NOTICE INVITING e-TENDER**

(File No.: AIIMS/BBSR/ENGG/ELE-2022/O&CAM/HOSP SUB STN-I&II/161 refers)

|                                                      |                                                                                                                                                                                                |
|------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>N.I.T. No.</b>                                    | <b>AIIMS/BBSR/ENGG/ELECT/20/2023</b>                                                                                                                                                           |
| <b>Name Of Work:</b>                                 | “Operation and Comprehensive Annual Maintenance Contract of 33/0.433 kV Substation (I & II) and External Light with Operation Services of DG Set & UPS at Hospital Campus AIIMS, Bhubaneswar”. |
| <b>Estimated Cost:</b>                               | <b>Rs. 3,87,29,507.00</b>                                                                                                                                                                      |
| <b>Earnest Money:</b>                                | <b>Rs. 7,74,600.00</b>                                                                                                                                                                         |
| <b>Performance Guarantee:</b>                        | <b>@ 3% of Contract Value</b>                                                                                                                                                                  |
| <b>Security Deposit:</b>                             | <b>@ 2.5% of Contract Value</b>                                                                                                                                                                |
| <b>Contract Period:</b>                              | <b>2 Years</b>                                                                                                                                                                                 |
| <b>Type of work:</b>                                 | <b>Operation and Maintenance Work</b>                                                                                                                                                          |
| <b>Tender issue date:</b>                            | <b>16/05/2023</b>                                                                                                                                                                              |
| <b>Pre-Bid Conference Date:</b>                      | <b>NA</b>                                                                                                                                                                                      |
| <b>Last Date &amp; Time of Submission of Tender:</b> | <b>07/06/2023 by 17.00 Hours</b>                                                                                                                                                               |

“Certified that, this tender document contains **97** pages only”.

Assistant Engineer (Elect.)  
AIIMS, Bhubaneswar

Executive Engineer (Elect.)  
AIIMS, Bhubaneswar

**Government of India, Ministry of Health & Family Welfare, AIIMS, Bhubaneswar**

|              |   |                                                                                                                                                                                                             |
|--------------|---|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Name of Work | : | <b>Operation and Comprehensive Annual Maintenance Contract of 33/0.433 KV Substation (I &amp; II) and External Light with Operation Services of DG Set &amp; UPS at Hospital Campus AIIMS, Bhubaneswar.</b> |
| NIT No.      | : | <b>AIIMS/BBSR/ENGG/ELECT/20/2023</b>                                                                                                                                                                        |

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**ALL INDIA INSTITUTE OF MEDICAL SCIENCE, BHUBANESWAR**  
**NOTICE INVITING e-TENDER**

|     |                                             |                                                                                                                                                                                                                                                   |
|-----|---------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| (a) | Name of Work                                | <b>Operation and Comprehensive Annual Maintenance Contract of 33/0.433 kV Substation (I &amp; II) and External Light with Operation Services of DG Set &amp; UPS at Hospital Campus AIIMS, Bhubaneswar.</b>                                       |
| (b) | Tender No.                                  | <b>AIIMS/BBSR/ENGG/ELECT/20/2023</b>                                                                                                                                                                                                              |
| (c) | Contract Period                             | 02 (Two) Year & Extendable further 01 (One) year with Mutual Consent.                                                                                                                                                                             |
| (d) | <b>Estimated Cost</b>                       | <b>Rs. 3,87,29,507.00 /-</b><br><b>(Rupees Three core Eighty-seven lakh Twenty-nine Thousand Five hundred Seven only)</b>                                                                                                                         |
| (e) | Earnest Money Deposit (EMD)                 | <b>Rs. 7,74,600.00</b><br><b>(Rupees Seven lakh Seventy-four thousand Six hundred only)</b>                                                                                                                                                       |
| (f) | Performance Security (Bank Guarantee)       | <b>3%</b> of Tendered Cost.                                                                                                                                                                                                                       |
| (g) | Security Deposit                            | <b>2.5%</b> of the Tendered Value.                                                                                                                                                                                                                |
| (h) | Tender documents will be Issued From        | As per e-Tendering Portal of AIIMS Bhubaneswar<br><a href="http://www.aiimsbhubanewar.nic.in">http://www.aiimsbhubanewar.nic.in</a> and<br>CPP Portal <a href="http://www.eprocure.gov.in">www.eprocure.gov.in</a> for downloading/ participating |
| (i) | Pre-Bid Conference Date :                   | <b>NA</b>                                                                                                                                                                                                                                         |
| (j) | Last Date & Time of Submission              | <b>07/06/2023 by 17.00 Hours</b>                                                                                                                                                                                                                  |
| (k) | Date, Time for the Opening of Technical Bid | <b>09/06/2023 by 11.00 Hours</b>                                                                                                                                                                                                                  |

1. The time of online submission of Tender is **07/06/2023 by 17.00 Hours**. The indenting Bidder must read the Terms & conditions of AIIMS, Bhubaneswar carefully. He/They should only submit his/her/their bid if he/she/they consider himself/themselves eligible and he/she/they is/are in possession of all the documents required.
2. Information and Instructions for bidders posted on website shall form part of bid document.
3. The Bid documents consisting of specifications, the schedule of quantities of various types of items to be executed and the set of terms & conditions of the contract to be complied with and other necessary documents can be seen and downloaded from website [www.aiimsbhubaneswar.edu.in](http://www.aiimsbhubaneswar.edu.in) or <https://eprocure.gov.in/eprocure/app>

**Executive Engineer (Elect.)**  
**AIIMS, Bhubaneswar**

**INFORMATION AND INSTRUCTIONS FOR BIDDERS FOR e-TENDERING FORMING PART OF BID DOCUMENT AND  
TO BE POSTED ON WEBSITE**

**(APPLICATION FOR INVITING BID ON TWO BID SYSTEM)**

The Executive Engineer (Elect.), AIIMS, Bhubaneswar, (Phone - 0674 2476500 , Email - [eeel@aiimsbhubaneswar.edu.in](mailto:eeel@aiimsbhubaneswar.edu.in)) invites on behalf of Executive Director, AIIMS, Bhubaneswar, Parentage Rate Tender from Valid license holder (HT or Above), reputed Agency in Two (02) Bid system (Technical cum Eligibility & Financial respectively) from eligible Agency of CPWD, MES, AIIMS, central Govt., State Govt., Central PSU, State PSU . having successfully completed works of similar nature as per eligibility criteria for the following work: -

| Ser. No. | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Details                                                                                                                                                                                                                                                      |
|----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| (a)      | NIT No.                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | AIIMS/BBSR/ENGG/ELECT/20/2023                                                                                                                                                                                                                                |
| (b)      | Name of Work:                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Operation and Comprehensive Annual Maintenance Contract of 33/0.433 kV Substation (I & II) and External Light with Operation Services of DG Set & UPS at Hospital Campus AIIMS, Bhubaneswar.                                                                 |
| (c)      | Estimated Cost                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Rs. 3,87,29,507.00 /-<br>(Rupees Three core Eighty-seven lakh Twenty-nine Thousand Five hundred Seven only)                                                                                                                                                  |
| (d)      | Earnest Money                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Rs. 7,74,600.00<br>(Rupees Seven lakh Seventy-foour thousand Six hundred only)                                                                                                                                                                               |
| (e)      | Period of Completion                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 02 (Two) Year & Extendable further 01 (One) year with Mutual agreeable basis between both Party.                                                                                                                                                             |
| (f)      | Last date and time of online submission of tender                                                                                                                                                                                                                                                                                                                                                                                                                             | 07/06/2023 by 17.00 Hours                                                                                                                                                                                                                                    |
| (g)      | Time and date of on line opening of Tender (Technical Bid)                                                                                                                                                                                                                                                                                                                                                                                                                    | 09/06/2023 by 11.00 Hours                                                                                                                                                                                                                                    |
| (h)      | Time and date of opening of Online Financial Bids                                                                                                                                                                                                                                                                                                                                                                                                                             | Will be informed to the Technically qualified Bidders.                                                                                                                                                                                                       |
| (i)      | Hard copies of Declaration in lieu of submitting of EMD, Registration Certificates, Undertaking, Affidavit and other uploaded document to be submitted to Executive Engineer (Elect), AIIMS Bhubaneswar office by the Bidders for reference. However, the Eligibility will be considered as per uploaded documents.<br><b>For any query kindly contact:</b><br><a href="mailto:eeel@aiimsbhubaneswar.edu.in">eeel@aiimsbhubaneswar.edu.in</a><br><b>Phone: 0674 – 2476500</b> | To be submitted <b>on same Days i.e. on 08/06/2023</b> i.e. by 14.00 Hours. In case the last day happens to be closed holiday, these Documents shall be submitted on the next working day failing which technical Bid will not be considered for Evaluation. |
| (j)      | Mode of submission of Tender                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Online.                                                                                                                                                                                                                                                      |

1. **Eligibility Criteria** : Contractor /Agency how fulfilled the following requirement shall be eligible to apply . Joint venture in not accepted.

a) The bidder should have satisfactorily completed the works as mention below during the last seven years end previous day of last date of submission of bid .

i. one (01) similar work each costing not less than **Rs. 3,09,83,606.00/-**

**OR**

ii. Two (02) similar works each costing not less than **Rs. 2,32,37,704.00/-**

**OR**

iii. Three (03) similar works each costing not less than **Rs. 1,54,91,803.00 /-**

**Similar work means “Annual maintenance Contract of operation and Maintenance of 33/11 kV or 33/0.433 KV Substation along with deployed manpower”**

2. The Bidder should have registration up to date with **Employee Provident Fund (EPF) Commissioner** and **Employee State Insurance (ESI) Corporation**.

3. The bidder should have positive net worth and should not have incurred loss in last 03 (Three) Years ending i.e. by 31<sup>st</sup> March 2022, duly certified by Chartered Accountant.

4. Agreements shall be drawn with the successful bidders for item/items on prescribed format. Bidders shall quote their rates as per various terms and conditions of the said form which will form part of the agreement.

5. The bid document consisting of plans, specifications, the schedule of quantities of the various type of items to be executed and the set of terms & conditions of the contract to be complied with and other necessary documents.

6. **The Bidder/Firm should have Valid Electrical (HT) Agency's License. Those who has no valid HT electrical license will comply the clause no 6.5 of rule for Enlistment of contract in CPWD,2020**

**OR**

**The agency can submit an undertaking in 100 rupees stamp paper that he will produce the electrical HT contractor license within 3 months of award of contract.**

7. **Submission/Upload of OEM/OEM Authorized Agency / (Appendix- A.) is mandatory, if the bidder will fail to upload the manufacturing authorization certificate the bid shall be summarily rejected.**

8. Conditional Bids shall not be considered and will be out-rightly rejected at the very first instance.

9. Average annual financial, the turnover during the last three years, ending 31<sup>st</sup> march 2022 should be more than 50% of the estimated cost (Not less than **Rs.@ 1,93,64,754.00/-**).

10. **Solvency certificate**: - solvency of amount equal to 40 % of the estimated cost put to tender (Not less than **Rs. 1,54,91,803.00 /-**)

11. The intending bidder must read the terms and conditions of Tender document carefully. He should submit his bid if he considers himself eligible and he is in possession of all the certificates / documents required.

12. Pre-bid Conference shall be held in First floor of board room, academic block in the chairmanship Superintendent Engineer (EIC), AIIMS Bhubaneswar and any clarification regarding tender of the bidders in pre-bid meeting will be published as a corrigendum after approval of AIIMS authority.

13. Information and Instructions for bidders for e-tendering posted on website shall form part of bid document.
14. the bid document consisting of NIT, plans, specifications, the schedule of quantities of various types of items to be executed and the set of terms and conditions of the contract to be complied with and other necessary documents can be seen and downloaded from <https://eprocure.gov.in> or [www.aiimsbhubaneswar.edu.in](http://www.aiimsbhubaneswar.edu.in) free of cost.
15. The bid can be submitted only after depositing e-tender Processing Fee in favour of ITI Limited and uploading the mandatory scanned documents as specified within the period of bid submission.
16. Copies of eligibility documents and EMD as specified in the notice inviting tender shall be scanned and uploaded on the e-tendering website within the period of tender submission. Bidders can upload documents in the form of JPG format, PDF format and any other format as permissible by the e-tendering portal.
17. Bidders must ensure to quote percentage above or below against each BOQ price. The column meant for quoting rate in figures appears in sky blue colour. In addition to this, while selecting any of the cells a warning appears that if any cell is left blank the same shall be treated as "0". Therefore, if any cell is left blank and no rate is quoted by the bidder, rate of such item shall be treated as "0" (ZERO). After submission of the bid online the Agency can re-submit revised bid any number of times but before last time and date of submission of bid as notified.
18. After submission of bid online, it can be revised any number of times before specified time on last date of submission of bid. While submitting the revised bid, bidder can revise the rate of one or more item(s) any number of times (he need not re-enter rate of all the items) but before last time and date of submission of bid as notified.
19. Financial bids shall be opened online only for bidders for whom EMD and other documents are found in order and who are found to be eligible to bid for work. On opening date, the bidder can login and see the bid opening process. After opening of bids, he will receive the competitor bid sheets.
20. If the Agency is found ineligible after opening of bids, his bid shall become invalid.
21. The department reserves the right to reject any prospective application without assigning any reason and to restrict the list of qualified agencies to any number deemed suitable by it, if too many bids are received satisfying the laid down criterion.

**Executive Engineer (Elect.)**  
**AIIMS, Bhubaneswar**

## GENERAL RULES & DIRECTIONS OF CONTRACT

The Executive Engineer (Elect.), AIIMS, Bhubaneswar, (Phone - 0674 2476500 , Email - [eeel@aiimsbhubaneswar.edu.in](mailto:eeel@aiimsbhubaneswar.edu.in)) invites on behalf of Executive Director, AIIMS, Bhubaneswar, percentage Rate Tender from Valid license holder (HT or Above), reputed Agency in Two (02) Bid system (Technical cum Eligibility & Financial respectively) from eligible agency of CPWD, MES, AIIMS, central Govt., State Govt., Central PSU, State PSU . having successfully completed works of similar nature as per eligibility criteria for the following work: -

**Name of Work:** *Tender for “Operation and Comprehensive Annual Maintenance Contract of 33/0.433 KV Substation (I & II) and External Light with Operation Services of DG Set & UPS at Hospital Campus AIIMS, Bhubaneswar.”*

1. **Preparation & Submission of Tender through Online.** The Tender should be submitted in 02 (Two) parts i.e. Technical Bid and Financial Bid Respectively. The Bid shall be submitted by the Bidder through online for “Operation and Comprehensive Annual Maintenance of 33/0.433 KV Substation (I & II) and External Light with Operation Services of DG Set & UPS at Hospital Campus AIIMS, Bhubaneswar.
2. ***The Bidders shall have to submit original documents for Original Earnest Money Deposit and self-certified copies of all the scanned and uploaded documents before the date and time of opening of tender at Executive Engineer(Electrical) office 3<sup>rd</sup> floor Academic Block AIIMS Bhubaneswar.***
3. **List of Documents to be scanned and uploaded within the period of bid submission.**
  - (a) Earnest Money Deposit in Favour of “All India Institute of Medical Sciences, Bhubaneswar”.
  - (b) FROM ‘A to E’ duly filled in and signed with stamp.
  - (c) Certificates of Work Experience & Work Completion Certificate to be issued by the officer of the rank not below Executive Engineer.
  - (d) Certificate of Registration for GST and acknowledgment of up-to-date filed return if required.
  - (e) Copy of PAN card
  - (f) Copies of IT return last 3 Years.
  - (g) Copies of Agency’s Valid Electrical License (HT and above) - refer eligible criteria point no. 6.
  - (h) Copies of ESI Registration (Enclose latest challan copy).
  - (i) Copies of EPF Registration (Enclose latest challan copy).
  - (j) The Bidder should have their Registered Office/Branch in Bhubaneswar. If not, an Office should be opened in Bhubaneswar within 30 (Thirty) Days of the award of Work. Details of Address Proof of Office located at Bhubaneswar should be given to EE(Elect).
  - (k) Declarations to be given by the Tenders.
  - (l) Profit/Loss: The bidder should not have incurred any loss (Profit after Tax should be positive) in more than two years during available the last five consecutive balance sheet, duly audited and certified by Chartered Accountant.
  - (m) Each page of the e-tender documents should be duly signed with seal otherwise the bid shall become invalid.
  - (n) OEM/OEM Authorized agency / Chanel partner Certificate **Appendix- A.**
  - (o) **Affidavit as per Annexure – I**
  - (p) ***Scanned copy of original solvency to be uploaded.***
4. **The bid submitted become invalid, if any discrepancy is noticed between the eligibility documents (as per Sl. No 02 para ‘a’ to ‘q’) as uploaded at the time of submission of bid.**
5. The intending bidder must read the terms and conditions of **CPWD -8** carefully. He should only submit his bid if he considers himself eligible and he is in possession of all the documents required.

6. **(a) Earnest Money Deposit.** The bidder shall be required to submit the Earnest Money Deposit the form of Fixed Deposit Receipt or Demand Draft from any Nationalized/Schedule Bank duly pledged in the name of the "**All India Institute of Medical Sciences, Bhubaneswar**". Document received without submitting of EMD will be rejected.
- (b) (i) As per SOP No. 5/1 & Clause No. 06 of CPWD Manual – 2019 the MSME firms registered in NSIC under PP policy are exempted from payment of EMD for supply of GOODS & Services only.
- (ii) Micro & Small Enterprises if registered with any Government bodies specified by Ministry of Micro, Small & Medium Enterprises (M/o MSME) with valid certificate duly issued by GOI are exempted for submitting Earnest Money Deposit (EMD).
- (iii) Other Firms, registered with MSME/NSIC with valid certificate duly issued by GOI are also exempted for submitting EMD. No other type of certificate is acceptable.
- (iv) The exemption and relaxation in EMD is subject to the validity & acceptance of their registration certificate on the date of Opening of Tender.
7. **Performance Guarantee.**
- (a) The successful Agency will be required to furnish a Performance guarantee of 03% (Three Percent) of Contract Value in the form of Fixed Deposit Receipt or Bank Guarantee from any Nationalized/Schedule Bank duly pledged in the name of the "**All India Institute of Medical Sciences, Bhubaneswar**" which shall be kept valid for a period of 60 days beyond completion of all the contractual obligations as per GCC.
- (b) The security deposit can be forfeited by order of this Institute in the event of any breach or negligence or non-observance of any condition of contract or for unsatisfactory performance or non-observance of any condition of the contract. Performance Security will be discharged after completion of Agency's performance obligations (including Warranty/Guarantee period) under the contract. In case the Agency fails to deposit the said performance guarantee within the period including the extended period if any, the Earnest Money deposited by the Agency shall be forfeited automatically without any notice to the Agency. The earnest money deposited along with tender shall be returned after receiving the aforesaid performance guarantee.
8. Intending Bidders are advised to inspect and examine the site and its surroundings and satisfy themselves before submitting their bids, the means of access to the site and in general shall themselves obtain all necessary information as to risks, contingencies and other circumstances which may influence or affect their bid. A bidder shall be deemed to have full knowledge of the site whether he inspects it or not and no extra charge consequent on any misunderstanding or otherwise shall be allowed. The bidders shall be responsible for arranging and maintaining at his own cost, all materials, tools & plants, water, electricity access, facilities for workers and all other services required for executing the work unless otherwise specifically provided for in the contract documents. Submission of a bid by a bidder implies that he has read this notice and all other contract documents and has made himself aware of the scope and specifications of the work to be done and of conditions.
9. The Tender paper/documents can be seen/downloaded from Official website & submitted through on line. For any query, Executive Engineer, Electrical, Phone: 0674 – 2476500 AIIMS, Bhubaneswar, may be contacted.
10. The Executive Director, AIIMS, Bhubaneswar does not bind itself to accept the lowest or any other bid and reserves to itself the authority to reject any or all the bids received without the assignment of any reason. All bids in which any of the prescribed condition is not fulfilled or any

- condition including that of conditional rebate is put forth by the bidder shall be summarily rejected.
11. Canvassing whether directly or indirectly, in connection with bidders is strictly prohibited and the bids submitted by the agency who resort to canvassing will be liable to rejection.
  12. The Executive Director, AIIMS, Bhubaneswar reserves to himself the right of accepting the whole or any part of the bid and the bidder shall be bound to perform the same at the rate quoted.
  13. The Agency shall not be permitted to bid for works in the AIIMS, Bhubaneswar responsible for award and execution of contracts, in which his near relative is posted as an officer in any capacity between the grades of Superintending Engineer and Junior Engineer (both inclusive). He shall also intimate the names of persons who are working with him in any capacity or are subsequently employed by him and who are near relatives to any gazetted officer in the AIIMS, Bhubaneswar. Any breach of this condition by the Agency would render him liable to be removed from the approved list of Agency of this Department.
  14. No Engineer of Gazetted rank or other Gazetted Officer employed in Engineering or Administrative duties in an Engineering Department of the Government of India is allowed to work as a Agency for a period of one year after his retirement from Government service, without the prior permission of the Government of India in writing. This contract is liable to be cancelled if either the Agency or any of his employees is found any time to be such a person who had not obtained the permission of the Government of India as aforesaid before submission of the bid or engagement in the Agency's service.
  15. **The bid for the works shall remain open for acceptance for a period of 75 days from the date of opening of bids.**
  16. This notice inviting bid shall form a part of the contract document. The successful bidder/ Agency, on acceptance of his bid by the Accepting Authority shall within 15 days from the stipulated date of start of the work, sign the contract consisting of "The Notice Inviting bid, all the documents including additional conditions, specifications and drawings, if any, forming part of the bid as uploaded at the time of invitation of bid and rate quoted online at the time of submission of bid and acceptance thereof together with any correspondence leading thereto.
  17.
    - (a) The quoted Rates shall be inclusive of GST.
    - (b) Security Deposit equal to 2.5% of the Contract Value will be deducted from the Bills of the Agency.
    - (c) The Income Tax as applicable shall be deducted from the Bill unless exempted by the Income Tax Department.
  18. **Goods and Services Tax (GST).**
    - (a) **GENERAL REMARKS ON TAXES & DUTIES:** In view of GST Implementation from 1<sup>st</sup> July 2017, all taxes and duties including Excise Duty, CST/VAT, Service tax Entry Tax and other indirect taxes and duties have been submerged in GST. Accordingly, reference of Excise Duty, service Tax, VAT, Sales Tax, Entry or any other form of indirect Tax except of GST mentioned in the bidding document shall be ignored.
    - (b) Bidders are required to submit copy of the GST Registration certificated while submitting the bids wherever GST (CGST & SGST/UTGST or IGST) is applicable.
    - (c) "GST shall mean Goods and services Tax charged on the supply of material(s) and services. The term 'GST' shall be construed to include the integrated Goods and Services Tax

(Hereinafter referred to as “IGST”) or central Goods and Services Tax (hereinafter referred to as “CGST”) or State Goods and services Tax (Hereafter referred to as “SGST”) or union Territory Goods and services Tax (hereinafter referred to as “UTGST”).

- (d) Quoted price/rate(s) should be inclusive of all taxes and duties, except GST (i.e. IGST or CGST and SGST /UTGST applicable in case of interstate supply or intra state supply respectively and cess on GST if applicable) on the final service. However, GST rate (including cess) to be provided in the respective places in the price Bid. please note that the responsibility of payment of GST (CGST & SGST or IGST or UTGST) lies with the supplier of Goods/services (service provider) only. Supplier of Goods/Service (Service provider) providing taxable service shall issue an invoice/Bill, as the case may be as per rules/regulation of GST. Further, returns and details required to be filled under GST laws & rules should be timely filed by supplier of Goods /services (Service provider) with requisite details.
- (e) The Agency(s) must be submitted GST Challan copy in original duly signed with stamp of firm, against this work before releasing Security Deposit (SD) money.

19. **FRAUD AND CORRUPTION:**

19.1 The Engineer-in-Charge will reject a proposal for award if he determines that the bidder recommended for award has been engaged in corrupt or fraudulent practices in competing for the contract in question. He will report to the Officer Inviting Bid / next higher authority.

19.2 Canvassing whether directly or indirectly, in connection with tenders is strictly prohibited & the tenders submitted by the agency who resort to canvassing will be liable for rejection.

19.3 The Agency shall be debarred for any period of time as decided by the AIIMS, Bhubaneswar Authority & forfeit the entire Amount of EMD for the following reason-.

- (i) If the Agency submits false experience/completion certificates, **as mentioned in Sl. No. - 1 Page No. - 5 (refer under Eligibility Criteria)**. The department reserves the right to verify the particulars furnished by the applicant independently.
- (ii) If the Agency fails to commence the work on or before the scheduled date stated in the work order.
- (iii) Violates any important condition of contract.

20. Information & Instruction for Agency will form Part of NIT.

Executive Engineer (Elect.)  
AIIMS Bhubaneswar

## **DECLARATIONS TO BE GIVEN BY THE TENDERERS**

**It is to certify that: -**

- (a) I /We have gone through CPWD W-8 amended up to correction Slip No.6 as available on website [www.eprocure.gov.in](http://www.eprocure.gov.in) / [www.aiimsbhubaneswar.edu.in](http://www.aiimsbhubaneswar.edu.in) or in the office of Superintendent Engineer and I/We agree with the terms and conditions of it and understood that it will form part of the agreement.

**Date:** \_\_\_\_\_

**Signature of the Tenderer**

- (b) “I, ..... S/o Shri ..... resident of ..... hereby certify that none of my Relative(s) as defined in Paragraph 14 of CPWD W-6 is/are employed in AIIMS Electrical Zone, Odisha. In case at any stage, it is found that the information given by me is false/incorrect, AIIMS shall have the absolute right to take any action as deemed fit without any prior intimation to me”.

**Date:** \_\_\_\_\_

**Signature of the Tenderer**

**NOTE:** - (To be certified by all the partners in case of partnership firms, by all the Directors in case of companies).

- (c) “I/We undertake and confirm that eligible similar Work(s) has/have not been got executed through another Agency on back to back basis. Further, it is stated that, if such a violation comes to the notice of Department, then I/We shall be debarred for bidding in AIIMS in future forever. Also, if such a violation comes to the notice of AIIMS, Bhubaneswar before date of start of work, the Superintending Engineer shall be free to forfeit the entire amount of Performance Guarantee”.

**Date:** \_\_\_\_\_

**Signature of the Tenderer**

**INFORMATION REGARDING ELIGIBILITY  
LETTER OF TRANSMITTAL**

From :

To

The Executive Engineer  
.....

Subject : Submission of Bids for the work of .....

Sir;

Having examined the details given in the bid documents for the above work, I/We hereby submit the relevant information.

1. I/We hereby certify that all the statement made and information supplied in the enclosed forms A to E and accompanying statement are true and correct.
2. I/We have furnished all information and details necessary for eligibility and have no further pertinent information to supply.
3. I/We submit the requisite certified solvency certificate and authorize the Executive Engineer ..... to approach the Bank issuing the solvency certificate to confirm the correctness thereof. I/We also authorize Executive Engineer ..... to approach individuals, employers, firms and corporation to verify our competence and general reputation.
4. I/We submit the following certificates in support of our suitability, technical knowledge and capability for having successfully completed the following eligible similar works :

| Name of the Work | Certificate from |
|------------------|------------------|
|                  |                  |

**Certificate : It is certified that the information given in the enclosed eligibility bid are correct. It is also certified that I/We shall be liable to be debarred, disqualified/cancellation of enlistment in case any information furnished by me/us is found to be incorrect.**

Enclosures : Seal of Bidder

Date of Submission :

Signature(s) of Bidder(s).

**FINANCIAL INFORMATION (FORM 'A')**

I. Financial Analysis – Details to be furnished duly supported by figures in balance sheet/profit & loss account for the last three financial years duly certified by the Chartered Accountant, as submitted by the applicant to the Income Tax Department (Copies to be attached).

| <b>Financial Years</b>        | <b>2019-20</b> | <b>2020-21</b> | <b>2021-22</b> |
|-------------------------------|----------------|----------------|----------------|
| <b>Gross Annual Turn over</b> |                |                |                |

(i) Gross Annual Turn Over on construction works.

(ii) Profit/Loss.

II. Financial arrangements for carrying out the proposed work.

**Signature of Bidder (s)**

**FORM 'B'**  
**BANKERS CERTIFICATE FROM A SCHEDULED BANK**

This is to certify that to the best of our knowledge and information that M/S/Shri ..... Having marginally noted address, as a Customer of our bank are/is respectable and can be treated as good for any engagement up to a limit of Rs. .... (Rupees .....)

This certificate is issued without any guarantee or responsibility on the Bank or any of the officers.

**(Signature) For the Bank**

**NOTE**

1. Bankers Certificates should be on letter head of the Bank, addressed to tendering authority.
2. In case of Partnership firm, certificate should include names of all partners as recorded with the Bank.

**FORM 'C'**

**DETAILS OF ELIGIBLE SIMILAR NATURE OF WORKS COMPLETED DURING THE LAST SEVEN YEARS  
ENDING PREVIOUS DAY OF LAST DAY OF SUBMISSION OF TENDERS**

| Ser. No. | Name of the Work/Project and Location | Owner or sponsoring organization | Cost of work in corers of rupees | Date of commencement as per contract | Stipulated date of completion | Actual date of completion | Litigation/ arbitration cases pending/ in progress with details* | Name and address/telephone No of officer to whom reference may be made | Whether work was done on back to back basis Yes/No |
|----------|---------------------------------------|----------------------------------|----------------------------------|--------------------------------------|-------------------------------|---------------------------|------------------------------------------------------------------|------------------------------------------------------------------------|----------------------------------------------------|
| (a)      | (b)                                   | (c)                              | (d)                              | (e)                                  | (f)                           | (g)                       | (h)                                                              | (j)                                                                    | (k)                                                |
| 1.       |                                       |                                  |                                  |                                      |                               |                           |                                                                  |                                                                        |                                                    |
| 2.       |                                       |                                  |                                  |                                      |                               |                           |                                                                  |                                                                        |                                                    |
| 3.       |                                       |                                  |                                  |                                      |                               |                           |                                                                  |                                                                        |                                                    |
| 4.       |                                       |                                  |                                  |                                      |                               |                           |                                                                  |                                                                        |                                                    |
| 5.       |                                       |                                  |                                  |                                      |                               |                           |                                                                  |                                                                        |                                                    |
| 6.       |                                       |                                  |                                  |                                      |                               |                           |                                                                  |                                                                        |                                                    |
| 7.       |                                       |                                  |                                  |                                      |                               |                           |                                                                  |                                                                        |                                                    |

**\*Indicate gross amount claimed and amount awarded by the Arbitrator.**

**Signature of Bidder(s)**

**FORM 'D'**  
**PERFORMANCE REPORT OF WORKS REFERRED TO IN FORMS 'C'**

1. Name of work/project & Location:
2. Agreement No:
3. Estimated Cost:
4. Tendered Cost:
5. Date of Start:
6. Date of completion:
- (i) Stipulated date of completion:
- (ii) Actual date of completion:
7. Amount of compensation levied for delayed completion, if any:
- (a) Whether case of levy of compensation for delay has been decided or not - Yes/No
- (b) If decided, amount of compensation levied for delayed completion, if any:
8. Amount of reduced rate items, if any
9. Performance Report:
  - (1) Quality of work : Outstanding/Very Good/Good/Poor
  - (2) Financial Soundness : Outstanding/Very Good/Good/Poor
  - (3) Technical Proficiency : Outstanding/Very Good/Good/Poor
  - (4) Resourcefulness : Outstanding/Very Good/Good/Poor
  - (5) General Behaviour : Outstanding/Very Good/Good/Poor

**Dated :**

**Executive Engineer or Equivalent**

**FORM 'E'**  
**STRUCTURE & ORGANISATION**

1. Name & Address of the Bidder :
2. Telephone No/Telex No/Fax No :
3. Legal status of the bidder (scan & upload copies of original document defining the legal status)
  - (a) An individual
  - (b) A proprietary firm.
  - (c) A firm in partnership.
  - (d) A limited Company or Corporation.
4. Particulars of registration with various Government Bodies (Scan & upload attested photo copy)

**Organization/Place of Registration**

**Registration No**

1.

2.

3.

5. Names and titles of Directors and Officers with designation to be concerned with this work.
6. Designation of individuals authorized to act for the organization.
7. Has the bidder, or any constituent partner in case of partnership firm, limited company/ Joint Venture, ever been convicted by the Court of Law? If so, give details.
8. In which field of Civil Engineering construction, the bidder has specialization and interest?
9. Any other information considered necessary but not included above.

Signatures of Bidder(s)

**Appendix- A****Manufacturers' Authorization Form**

To;

The Executive Director  
All India Institute of Medical Sciences  
AIIMS, Bhubaneswar

Tender No :

Dated :

**E-Tender for the work of** : Operation and Comprehensive Annual Maintenance Contract of 33/0.433 KV  
Substation (I&II) and External Light with Operation Services of DG Set & UPS  
At Hospital Campus, AIIMS, Bhubaneswar

Equipment Name :

Dear Sir/Madam;

1. We \_\_\_\_\_ (Name of the OEM/OEM authorized agency) are the original manufacture of the above equipment having registered office at \_\_\_\_\_ (full address with telephone No/Fax \_\_\_\_\_ do hereby declares to give maintenance \_\_\_\_\_ support to \_\_\_\_\_ through M/S \_\_\_\_\_, who is participating in Tender having No \_\_\_\_\_ of AIIMS, Bhubaneswar.

2. We also hereby declare that we have the capacity to provide the spare parts of the equipment within the stipulated time and also provide service to it.

Name : \_\_\_\_\_  
For and on behalf of M/S \_\_\_\_\_  
Faithfully,

Yours  
  
(Name)  
(Name of the Manufacturers)

Place :

Date :

**Note** : This letter of authority should be on the letter head of the OEM/OEM Authorized agency and Shall be signed by a Authorized person from OEM/OEM Authorized Agency of **ABB & SCHNIDER**.

**All India Institute of Medical Sciences**  
**Engineering Branch, Bhubaneswar (Odisha)-751019**  
[www.aiimsbhubaneswar.edu.in](http://www.aiimsbhubaneswar.edu.in)

**BIDDERS UNDERTAKING**

E-Tender for the work of: Tender for “**Operation and Comprehensive Annual Maintenance Contract of 33/0.433 KV Substation (I & II) and External Light with Operation Services of DG Set & UPS at Hospital Campus AIIMS, Bhubaneswar**”

To be submitted online by:

**TENDER**

I/We have read and examined the notice inviting tender, schedule, A,B,C,D,E & F, specifications applicable, Drawings & Designs, General Rules and Directions, Conditions of Contract, clauses of contract, Special conditions, Schedule of Rate & other documents and Rules referred to in the conditions of contract and all other contents in the tender document for the work.

I/We hereby tender for the execution of the work specified for the AIIMS Bhubaneswar within the time specified in Schedule 'F', viz., schedule of quantities and in accordance in all respects with the specifications, designs, drawings and instructions in writing referred to in Rule-1 of General Rules and Directions and in Clause 11 of the Conditions of contract and with such materials as are provided for, by, and in respects in accordance with, such conditions so far as applicable.

I/We agree to keep the tender open for **One Hundred Eighty (180) days** from the due date of opening of financial bid and not to make any modification in its terms and conditions.

A sum of Rs..... is hereby forwarded in Receipt Treasury Challan/ Deposit at Call Receipt of a Scheduled Bank/ Fixed Deposit Receipts of a Scheduled Bank/ Demand Draft of a Scheduled Bank/ Bank Guarantee issued by a Scheduled Bank as earnest money. A copy of the earnest money in Receipt Treasury Challan/ Deposit at Call Receipt of a Scheduled Bank/ Fixed Deposit Receipts of a Scheduled Bank/ Demand Draft of a Scheduled Bank/ Bank Guarantee issued by a Scheduled Bank is submitted with tender. If I/We, fail to furnish the prescribed performance guarantee within prescribed tender, I/we agree that the said President of India or his successors, in office shall without prejudice to any other right or remedy, be at liberty to forfeit the said earnest money absolutely. Further, if I/We fail to commence work as specified, I/We agree that President of India or his successors in office shall without prejudice to any other right or remedy available in law, be at liberty to forfeit the said performance guarantee absolutely. The said Performance Guarantee shall be guarantee to execute all the works referred to in the tender documents upon the terms and conditions contained or referred to those in excess of that limit at the rates to be determined in accordance with the provision contained in Clause 12.2 and 12.3 of the General Conditions of Contracts (CPWD). Further, I/we agree that in case of forfeiture of earnest money or performance guarantee as aforesaid, I/We shall be debarred for participation in the re-tendering process of the work.

I/We undertake and confirm that eligible similar work(s) has / have not been got executed through another contractor on back to back basis. Further that, if such a violation comes to the notice of Department, then I/We shall be debarred for tendering in AIIMS Bhubaneswar in future forever. Also, if such a violation comes to the notice of Department before date of start of work, The Engineer – in – Charge shall be free to forfeit the entire amount of Earnest Money Deposited / Performance Guarantee.

I/We hereby declare that I/we shall treat the tender documents drawings and other records connected with the work as secret/confidential documents and shall not communicate information/derived therefrom to any person other than a person to whom I/We am/are authorized to communicate the same or use the information in any manner prejudicial to the safety of the State.

Dated.....

Signature of Contractor

Postal Address

Witness:

e-Mail id

Address:

Occupation:

(To be filled in by the contractor/witness as applicable)

### **ACCEPTANCE**

The above tender (as modified vide letters mentioned hereunder) is accepted by me for and on behalf of the AIIMS Bhubaneswar for a sum of ₹. \_\_\_\_\_ \*

(Rupees \_\_\_\_\_ \* \_\_\_\_\_)

The letters referred to below shall form part of this contract Agreement:-

a) \_\_\_\_\_ \*

b) \_\_\_\_\_

c) \_\_\_\_\_

For & on behalf of the AIIMS Bhubaneswar.

Signature.....

Dated .....

Designation.....

**Annexure- 1****GENERAL CONDITIONS FOR ANNUAL MAINTENANCE CONTRACT**

**“Operation and Comprehensive Annual Maintenance Contract of 33/0.433 KV Substation (I & II) and External Light with Operation Services of DG Set & UPS at Hospital Campus AIIMS, Bhubaneswar.”**

1. Prices quoted should be valid for the contract period from the date of opening of your offer. The prices quoted should be for the entire scope of work.

2. **Rates-** The prices quoted shall be inclusive of GST, PF & ESI amount paid to the statutory authorities by the Agency shall be reimbursed on actual basis throughout the contract period on submission of the documentary evidence in next bill or after the final bill. GST shall be reimbursed on actual basis on submission of the documentary evidence.

**3. PF & ESIC Contribution: -**

(i) The Agency shall have to register with PF & ESIC (where ever applicable) for workmen engaged for the work & challans / deposit receipts of PF ESI contribution shall be submitted in EIC office for verification/reimbursement, at the time of submission of bill.

(ii) The PF dues (including EDLI and administrative charges) in respect of workers engaged by the Agency for AIIMS works to be deposited by the Agency every month by a challan and the documentary evidence in support of such payments along-with employee wise details of the PF contribution (both employee's share and the employer's contribution) need to be submitted to the Engineer in Charge for the work/ contract.

**4. Terms of Payment: -**

**4.1 Running bill Payment:**

The Running payments for the work shall be released **MONTHLY** by AIIMS, Bhubaneswar. The Security Deposit @ 2.5% of gross amount of the bill shall be deducted from the running bills, which shall be released after successful completion of Defects Liability Period i.e. six months from the date of completion of work, without any interest thereupon.

The Following documents as applicable shall be produced and self-attested photo copy shall be submitted by the Agency during each running bills:

- (i) Delivery Challan of all the material supplied.
- (ii) Test Certificate of Equipment.
- (iii) Monthly Challans of EPF and ESI deposits up to previous month.
- (iv) Master Roll & Wages register signed by workers of each month.
- (v) Copies of attendance Register
- (vi) Preventive Maintenance Record
- (vii) Bank Account details/ e-payment details of the vendor.
- (viii) Warranty/Guarantee Certificate if applicable.
- (ix) GST return up-to-date Voucher.
- (x) Bank statements against salary credit of Manpower deployed.
- (xi) Colour Photos for Executed work on glossary paper.
- (xii) Noclaim certificate (Final bill)
- (xiii) Certified copies of Annexure – B (Individual Equipment)

**4.2 Final bill Payment:**

The agency shall submit final bill along with all the documents related with PF, ESIC to AIIMS, Bhubaneswar in addition to all maintenance schedule registers, documents etc. related to the

work. The agency also formally handover the list of equipment in good working condition, without any damage as handed over to them by AIIMS, Bhubaneswar.

#### **4.3 Labour Wages:**

- (i) The Agency has to pay the prevailing minimum wages issued by the office of Regional Labour Commissioner/ Chief Labour Commissioner (whichever is higher), from time to time.
- (ii) The payment to the workmen's engaged by the Agency is to be paid through NEFT/RTGS/Cheque on or before 7th of every month irrespective of Saturday, Sunday and bank holidays. If any violation with respect to payment of wages for any two months in a contract period necessary action for cancellation of contract, debarring of the agency for participating in future contracts in AIIMS, Bhubaneswar shall be initiated. The agency will not be allowed to participate in any of the tendering process in AIIMS, Bhubaneswar till finalization of the decision. (If non-payment of wages for two consecutive months is repeated two times in a tender period the tender will be terminated without further notice).
- (iii) The contractor has to pay the prevailing minimum wages issued by the office of chief labour commission, Govt. of India time to time.
  - a. Minimum Wages + VDA
  - b. ESI- Employer contribution @ 3.25% of above (subject to wages limit of Rs 21,000)
  - c. EPF- Employer contribution @ 12%+1% (12% subject to wage limit of 15,000)

#### **5. Transport**

- 5.1) The transport required within the complex for carrying items inside the AIIMS complex for supply of materials, repairing work etc. shall be arranged by the Agency. The Agency may however seek the help of department to take permission to take heavy items for repair outside the AIIMS, Bhubaneswar complex if considered necessary.
- 5.2) Agency's materials, transport, etc. shall normally be permitted to go out of the area between 9.00hrs.to 18.00hrs only. Agency may also be allowed to carry out the work beyond office hours (day and night) with special permission from the Executive Director AIIMS, Bhubaneswar. However, no movement of materials and transport out of site of works shall be permitted during night or during holidays unless special permission obtained from the Executive Director, AIIMS, Bhubaneswar.

#### **6. Antecedents**

The Agency shall employ only Indian Nationals as his representatives, servants, work men and verify their antecedents and loyalty before employing them on the works. He shall ensure that no person of notorious antecedents and nationality is in anyway associated with the works and if for reasons of technical collaboration or other consideration, the employment of any foreign national is unavoidable, the Agency shall furnish full particulars to this effect to the accepting officer at the time of submission of tender. The Executive Director, AIIMS, Bhubaneswar shall have full powers and without giving any reasons to the Agency immediately cease to employ in connection with this contract, any representative agency, servant and workman or employee whose continuous employment in his opinion is undesirable. The Agency shall not be allowed any compensation on this account.

**7. The term of agreement shall be initially for a period of Two year. On expiry of the term the contract may be extended for another one year on mutual agreeable by both the parties on the same rate and terms and conditions of Contract.**

8. The waste paper shall not be transported outside the AIIMS, Bhubaneswar site but burnt out in the incinerators, provided within the premises

#### 9. Penalty Clause:

9.1 Any breakdown/service of substation equipment must be rectified/ attended within stipulated period as directed by EIC, failing which the same work will be taken up by the AIIMS authority in risk and cost basis and the payment for the same will be deducted in next RA bill.

9.2 In case of any failure of / delay in services the penalty shall be invoked as per Clause-2 of GCC of CPWD works-2020, by the as per schedule F.

9.3 In case of less deployment of staff from the contract if found at any time at site, **Rs 10,000/-** shall be deducted from next RA bill for this purpose.

9.4 All melba/rubbish/waste, garbage etc generated due to any operation and maintenance work, the same shall be disposed of by the Agency to the authorized municipal dumping ground and nothing extra shall paid on this account. In case of non-removal/disposal in the specified period, a compensation of ₹ 1000/- (Rupee One Thousand only) per day shall be recovered from the Agency.

9.5 In case the Vendor/Agency will not give the salary in time i.e. 7<sup>th</sup> of every month to the employee deployed to perform the work in site, a compensation of ₹ 1000/- (Rupee One Thousand only) per day shall be recovered from the RA bill of the Agency.

9.6 The Agency shall maintain the installations clean and tidy inside as well as around the installations and buildings. No rags and waste etc. shall be thrown near the building. This shall be deposited in the dustbins provided nearby. If Substation area mention in the scope is found untidy a lump sum amount (**Rs. 1000/- per day**) will be deducted from the Agency's bill.

9.7 If the vendor will not supply the material as per requisition within the stipulated time period mentioned in tender then **Rs 1000/-** per day will be deducted from the Agency's bill.

10. In case of more requirement of manpower from the contact (27 Nos), the same shall be deployed as per written instruction of the Engineering In charge or his authorized officer. The payment for the aforesaid additional manpower shall be made as per rate fixed in the contract.

#### 11. Maintenance of records:

The Agency shall maintain all records such as log book, schedule of maintenance activity, complaint register, attendance register, stock register, material requisition book, gate pass and other statutory registers for manpower employed etc. such records are to be maintained as per the formats supplied by the department. Records of major breakdown occurred during the period shall be maintained showing the cause of the defect and location and type of repairs carried out. The cost of stationary required for maintenance of the above record are under the scope of Agency.

#### 12. **Following documents/records to be maintained at site for Substation, DG individually & Online UPS.**

1. Material Stock Register for SS-1 & SS-2, DG Set, UPS.
2. Monthly Roster Duty Chart of all Employees.
3. Issue Register of materials.
4. Attendance Register.
5. Complaint register

6. List of tools and test equipment's available at site Register
7. HT Panel, LT panel, DG, Battery & Online UPS Log book should be maintained in prescribed format as given by Engineering-In-Charge or his representative
8. Diesel Stock & Consumption Register
9. Logbook, Hand over and take over Register
10. Meter Reading Sheet
11. Power Failure, Shutdown Breakdown register
12. Preventive Maintenance Schedule Register
13. IR & ER Value Register, earth pit resistance value register.
14. Testing/Calibration Register

13. The Agency shall employ the required number of personnel depending upon the requirement of AIIMS, Bhubaneswar on "as required basis" including technical and non-technical personnel. The Agency shall, during the progress of the works, employ a whole-time qualified, experienced and competent representative at the site for executing the work. **The Agency should submit the biodata, Educational certificates, Experience certificate, ID proof, Address proof, 2 nos. of passport size photographs, police verification certificate and any other necessary documents of all employees to be engaged for the work to the office of Engineer-In-Charge at the time of deploy.**

14. The work shall be governed by AIIMS, Bhubaneswar general conditions and security regulations of the contract.

15. The Executive Director, AIIMS, Bhubaneswar or any one or more officers authorized by him shall have the right to visit Agency/sub Agency premises to check the physical progress of work, inspection, testing etc. of the contract items or any part thereof at any time during all stages of operation & maintenance. The Agency shall extend all necessary facilities for carrying out such inspection and check of progress of work.

#### 16. Specifications and Standards

The operation and maintenance shall be in conformity with relevant Indian standard specification, National Electrical codes including provisions of these specifications. In the event of any conflict between the provisions/clause for a particular item in the above-mentioned rules and specifications the most suited clause based on requirement shall be applicable.

17. Any work/engaging of Manpower, that the tenderer would normally off load to his sub-vendor or sub Agency with intimate to EIC. It is to be noted that the Executive Director, AIIMS, Bhubaneswar shall not have any obligations whatsoever towards the tenderer's sub-Agency / sub-vendor. Only the tenderer is responsible to the Executive Director, AIIMS, Bhubaneswar and AIIMS, Bhubaneswar does not accept any liability for the sub-Agency or his work men.

If the agency will engage the Manpower from sub-agency then agency must be taken approval from ESI and Agreement between Agency and Sub-agency must be submitted. Also fulfil all the norms like wages, EPF, ESI and Medical Insurance as per terms and condition of Contract or GOI Norms for which only Agency will be liable to respond.

18. It is the responsibility of the successful tenderer to hand over the entire system to the Executive Director, AIIMS, Bhubaneswar on completion of the contract period in its initial working condition. Any damages/replacement etc. should be done at free of cost with the knowledge of the Executive Director, AIIMS, Bhubaneswar. The final taking over will be done after detailed joint inspection by the Executive Director, AIIMS, Bhubaneswar/ or his authorized representative and the Agency on completion of the contract period.

19. The lump sum price offered by the Agency shall include the charges for any minor job of maintenance which are obviously fairly intended and which may not have been referred to in these documents but are essential for this work. In case of difference of opinion as to whether or

not a certain item of work constitutes minor details of maintenance or not included in agency prices, the decision of Executive Director, AIIMS, Bhubaneswar shall be final and binding.

**20. Risk Purchases:**

The cost of repairs/rectification's necessitated due to negligence of Agency's employee shall be recovered from the Agency as per assessment made by the Executive Director, AIIMS, Bhubaneswar. If the Agency fails to repair/rectify the defects in installations within the time given to him, the same will be got repaired/rectified from other agency at the risk and cost of the Agency. The decision of Executive Director, AIIMS, Bhubaneswar shall be final and binding on both the parties.

21. If the attendance falls short of the contracted minimum number of persons the pro-rata amount shall be deducted from his bill. Similarly, if the work is found unsatisfactory and not up to the expected standards, an amount which the Executive Director, AIIMS, Bhubaneswar determines, shall be deducted from the Agency's bill. The amount so deducted shall be final.

22. The Agency shall be solely responsible for compliance to the provisions of various Labour and industrial laws, such as, wages, allowances, compensations, EPF, Bonus, Gratuity, ESI etc. relating to personnel deployed by it at AIIMS, Bhubaneswar site or for any accident caused to them and the institute shall not be liable to bear any expense in this regard. The Agency shall make payment of wages to workers engaged by it by the stipulated date irrespective of any delay in settlement of its bill by AIIMS, Bhubaneswar for whatever reason. The Agency shall also be responsible for the insurance of its personnel. The Agency shall specifically ensure compliance of various Laws / Acts, including but not limited to with the following and their re-enactments / amendments / modifications: -

- (a) The Payment of Wages Act 1936.
- (b) The Employees Provident Fund & MP Act, 1952.
- (c) The Contract Labour (Regulation) Act, 1970.
- (d) The Payment of Bonus Act, 1965.
- (e) The Payment of Gratuity Act, 1972.
- (f) The Employees State Insurance Act, 1948.
- (g) The Employment of Children Act, 1938.
- (h) The Motor Vehicle Act, 1988.
- (i) Minimum Wages Act, 1948.

**23. Breach of Terms and Conditions.**

Noncompliance of any terms and conditions enumerated in the contract shall be treated as breach of contract. In case of breach of any terms and conditions as mentioned above, the Competent Authority, will have the right to reject the bid at any stage without assigning any reason thereof and nothing will be payable by AIIMS, Bhubaneswar in that event the EMD shall also stand forfeited.

**24. Termination of Contract.**

AIIMS, Bhubaneswar has the right to terminate the contract, in case the work performance is not up to the standard, or in case there is any violation of the contract. The decision of Engineering- In-charge is final and binding in this regard.

**25. Arbitration.**

The Arbitration shall be held in accordance with the provision of the Arbitration and conciliations Act, 1996 and the venue of arbitration shall be at Bhubaneswar. The decision of the Arbitrator shall be final and binding on the both parties.

**26. Dispute Settlement.**

It is mutually agreed that all differences and disputes arising out of or in connection with this agreement shall be settled by mutual discussions and negotiations if such disputes and differences cannot be settled and resolved by discussions and negotiations then same shall be referred to the sole Arbitrator appointed by the Executive Director, AIIMS, BHUBANESWAR whose decision shall be final and binding on both the parties. The contract shall be governed by laws and procedures established by Govt. of India, within the framework of applicable legislation and enactment made from time to time concerning such commercial dealings/ processing.

27. GST and other Taxes as applicable shall be recovered/ paid from the Agency's bill as per Govt. of India/AIIMS Rules.

28. Payment shall be made on after successful completion of work and due Certification of the Bills by the AE & Representative of Engineer-in-Charge.

## **ADDITIONAL CONDITIONS FOR ELECTRICAL WORKS**

### **A. GENERAL CONDITIONS**

1. **Operation and Comprehensive Annual Maintenance Contract of 33/0.433 KV Substation (I & II) and External Light with Operation Services of DG Set & UPS at Hospital Campus AIIMS, Bhubaneswar.**
2. For all items of Electrical, CPWD specifications with correction slips up to the date of receipt of tender shall be followed. For the items which are not covered under CPWD specifications; the special conditions /B.I.S. specifications shall be applied. In this regard the decision of Engineer-in-charge shall be final & binding.
3. Wherever any reference is made of any Indian Standard, it shall be taken as reference to the latest edition with all amendments / revision issued thereto up to the date of receipt of tenders.
4. Unless otherwise specified, the agreement rates for all items of work in the schedule of quantities are for all heights, depths, leads and lifts involved in the execution of work.
5. Other agencies working at site will also simultaneously execute the work entrusted to them and the Agency shall offer necessary co-operation wherever required to other agencies.
6. On account of security consideration, there could be some restrictions on the working hours, movement of vehicles for transportation of materials. The contractor shall be bound to follow all such restrictions and adjust the program for execution accordingly, for which nothing extra shall be paid.
7. The work shall be carried out in a manner complying in all respects with the requirements of relevant by laws of the local bodies, Labour Laws, minimum wages act, workmen compensation act and other statutory laws enact by Central Govt. as well as State Govt.
8. No residential accommodation shall be provided to any of the staff engaged by the Agency. The Agency shall not be allowed to erect any temporary set up for staff in the campus.
9. No claims of the labours shall be entertained by the Department including that of providing employment, regularization of services etc.
10. The Agency shall have registration with Employee's Provident Fund commission and Employee's state Insurance Corporation for safe guarding interest of his workmen. He shall obtain all other necessary approvals from statutory bodies as per law in vogue.

11. **The Agency shall have to arrange the required Computer, Printer, 3 Mobile phones(BSNL Sim only), furniture etc. at his own cost pertaining to his job and he will take all the settings back only after the expiry of the agreement for which nothing extra shall be paid.**
12. The Agency shall take immediate action to attend any complaint assigned to him through site order book/verbal instructions from Engineer-in-Charge or his representative over telephones from occupants. In all cases he shall attend the complaints in the specified duration as mentioned below.
13. The personnel and laborers engaged by the Agency under this contract shall wear neat and clean uniforms are approved by the Engineer-in-Charge along with name badges. As identity card duly countersigned by the Engineer-in-charge or his representative shall be issued to each personnel by the Agency to have proper identifications. The character and antecedents of the staff employed by the Agency shall be got verified from the police by the Agency.
14. The firm/Agency shall maintain wage record and he should not pay wage less than the minimum wages as prescribed/amended by the labour Department/Govt. from time to time.
15. Staff employed by the Agency should be well behaved, polite & courteous. Any complaint against staff on behaviour should be taken very seriously and such staff should be removed by the Agency immediately from the site with replacement of a suitable candidate.
16. All dismantled material will be removed from site by Agency after duly verification and measurement of the same by JE/AE and EE.
17. The Agency shall make all safety arrangements required for the labour engaged by him at his own cost. All consequences due to negligence or due to lapse of security/safety or otherwise, shall remain with the Agency. The department shall not be responsible for any mishap, injury, accident or death of the Agency's staff. No claim in this regard shall be entertained / accepted by the department. Also, Agency is responsible to the damage caused to any man/material other than his team during execution, and AIIMS will not be responsible for that.
18. Agency shall be fully responsible for any damages caused to govt. property by his or his labour in carrying out the work and shall be rectified by the Agency at his own cost.
19. GST and other Taxes as applicable shall be recovered/paid from the Agency's bill as per Govt. of India/AIIMS Rules.
20. In the case of discrepancy between the schedule of quantities, the Specifications and/or the Drawings, the following order of preference shall be observed: -
  - (a) Description of schedule of quantities.
  - (b) Additional specifications and special conditions, if any.
  - (c) Contract clauses of general conditions of contract for central P.W.D. works.
  - (d) Architectural drawings.
  - (e) Indian standards specifications/BIS. Any reference made to any Indian standards specifications in these documents, shall imply to the latest version of that standard, including such revisions/amendments as issued by the Bureau of Indian Standards up to last date of receipt of tenders. The Agency shall keep all such publications of relevant Indian Standards applicable to the worksite at his own cost.
21. The agency shall restore back the premises and other articles provided by the department to the department at the time of closure of the contract.

22. No permanently /temporary huts /structures shall be constructed by the Agency at the site of work or at any government land/premises. Such structures, if any, found at the site or at AIIMS Bhubaneswar land shall be demolished and removed at the cost of the agency without any notice.
23. Any damage to the building structure, fittings or any other articles etc. done by the Agency on his workman during the execution of the work shall be made good by the Agency at his own cost.
24. The Agency shall clear the site property after the completion of the work.
25. Major/Minor complaint shall be decided by the EE/Engineer-in-charge or AE/his representative. The decision of Engineer-In-charge shall be final & binding.
26. Payment shall be made on after successful completion of work and due Certification of the Bills by the Representative of Engineer-in-Charge.
27. The Agency shall have to provide Drinking water at the site.

**B. SPECIAL CONDITIONS**

1. Any facility not mentioned in this scope, but which is vital **Operation and Comprehensive Annual Maintenance Contract of 33/0.433 KV Substation (I & II) and External Light with Operation Services of DG Set & UPS at Hospital Campus AIIMS, Bhubaneswar.”** are assumed to be included in the scope of work.
2. Agency has to ensure safety and provide adequate supervision/precautions during the work.
3. During working at site, any Rule/restrictions may be imposed by Engineer-in-Charge/Security staff of Corporation or Local Authorities regarding safety and security etc., the Agency shall be bound to follow all such restrictions/instruction & nothing extra shall be payable on this account & no claim for delay on this account shall be entertained.
4. **The tender shall be based on Conditions of Contract and tenderers are required to quote their % rates against BOQ item in schedule of quantities, which is enclosed. All rates shall remain firm for the contract period/extended contract period.**
5. If the Agency fails to proceed with the work within the stipulated time as specified from the date of issue of letter of intent/letter to proceed with the work, the Department shall forfeit the earnest money deposited by him along with the tender.
6. All the works to be carried out in accordance with latest CPWD/BIS Specifications and as per the directions of Engineer-in-charge.
7. **Packing:** The supplier shall provide such packing of the goods, as is required to prevent their damages or deterioration during the transit to their final destination as indicated in the contract. The packing shall be sufficient to withstand, without limitation, rough handling during transit.
8. **DRAWING AND SPECIFICATIONS**  
  
A copy of tender documents and all relevant drawings and specifications viz. Indian standards, latest CPWD specifications etc. shall be made available at site if & when asked for reference.
9. **COST OF TESTS**  
  
The cost of preparing samples and carrying out tests for quality of material or workmanship will be borne by the Agency except for such exclusions as are specifically mentioned in the

- specifications laid down in contract. The cost of all test carried out by Laboratories directed by the Engineer-in-Charge will be borne by the Agency.
10. The work shall be carried out strictly as per the attached technical specifications, relevant IS specifications, Indian Electricity Rules & National Electrical Code.
  11. The Agency has to get approved all the material from the Engineer-in-Charge before its actual use at site of work.
  12. The scope of work includes all minor building works required for execution work such as cutting of wall etc. and making good the same. Nothing extra will be paid to Agency for the same.
  13. If the scheduled maintenance work will not be carried out by the Vendor/Agency within 15 days of the Scheduled date, the same will be executed by AIIMS Authority by Third party and the payment for the same will be deducted from next RA bill.
  14. The watch and ward of material and installation shall rest on the part of Agency during execution of work and till handing over of the same after completion of work in accordance with schedule of work.
  15. The Agency will take care of the building etc. while handling/installing the equipment to avoid damages to the building. If any damages occur during execution of work, it shall be made good by Agency without any extra cost.
  16. Existing materials in good condition may be used after joint inspection by AIIMS representatives & vendor.
  17. Dismantled/ un-used materials to be deposited at Engineering Dept. by the Firm.
  18. The vendor shall submit colour photographs printed with glossy paper for showing different stages of work during the submission of final bill.
  19. Manpower deployed for operation and maintenance work may be engaged for any other work at AIIMS complex as and when recruited by the direction of Engineering In charge/ E.E. (Electrical) of AIIMS.
  20. Minor welding work as and when required to be carried out by the Agency.
  21. The all electrical works to be done as per I.E rule 1956.
  22. **Warranty/Guarantee: The warranty/Guarantee certificate shall be provided as per manufacture standard norms.**
  23. All safety appliances like Safety shoes, Safety gloves, Safety helmet, Safety belt, Safety goggles etc. shall be arranged before starting the job.
  24. The tender shall be based on Conditions of Contract and tenderers are required to quote their own rates against each item in schedule of quantities (B.O.Q), which is enclosed. All rates shall remain firm for the contract period/extended contract period.
  25. Three dedicated telephone number shall be provided by the agency in the substation I & II & UPS.
  26. Site engineer as per clause 36 (i) of Proforma of Schedules shall be deployed at site for supervising the day to day maintenance.

#### **C. GENERAL CONDITIONS FOR SUPPLY OF MATERIALS**

1. The materials shall be as per CPWD specifications with up to date correction slip and ISI specifications wherever mentioned and as per **list of approved makes (enclosed)**.
2. In the event of any variation between CPWD specifications and that in the IS code the former shall take precedent over the later. In the event of variation between the nomenclature of item as per schedule of quantities and specifications, the former shall prevail.
3. The sample of all the items shall have to be got approved by the Agency from the Engineer-in-Charge/Executive Engineer or his Representative before the supply commences. The approval of sample shall be only in respect of workmanship and finish, and shall be without prejudice to the right of Engineer-in-Charge to get random samples tested out of the actual lot received as per additional conditions. This decision is the prerogative of Engineer-in-Charge.
4. The Agency shall furnish the manufacture's certificate (if instructed) that the material supplied satisfy the requirements of the relevant specifications.
5. The Engineer-in-Charge shall be at liberty to test respective sample(s) of each item from schedule of quantity in any approved laboratory as decided by him. The sample for testing shall be provided by the Agency. The testing charge in respect of satisfactory test shall be borne by the Agency. All other expenditure required to be incurred for making available the sample conveyance and packing etc., shall be borne by the Agency himself. In case any sample of particular lot fails in testing the Agency shall be bound to replace the entire lot with fresh material of prescribed specifications and the rejected lot shall only be returned to the Agency after fresh lot is supplied.
6. After completion of work, the defective and damaged materials (Spare/Equipment/Scraps) shall be handed over to the AIIMS Authority or to be removed by the Agency at his own cost.
7. In case of any dispute regarding rejection of quantity of materials, the decision of Engineer-in-Charge shall be final and binding up on the Agency.
8. Specialized services as indicated in the contract must be done through authorized dealer or service centre or manufacturer only. The Agency will submit the GST invoice for the equipment's or spares purchased from manufacturer or authorized dealer. Similarly, for services the agency shall submit the service report from authorized service centre or dealer for processing the payment.

**Executive Engineer (Elect.)**  
**AIIMS Bhubaneswar**

## GENERAL TECHNICAL SPECIFICATIONS OF ELECTRICAL WORK

### 1. STANDARDS AND CODES.

Latest up to date Indian Standard (IS) and Code of practice will apply to the equipment and the work covered by the scope of this contract. In addition, the relevant clauses of the Indian Electricity Act 1910 and Indian Electricity Rules 1956 as amended Up To Date shall also apply. Wherever, appropriate Indian Standards are not available, relevant British and/or IEC Standard shall be applicable.

### 2.0 HT CABLES

#### 2.1 GENERAL

HT Cables shall be supplied, inspected, laid, tested and commissioned in accordance with specifications, relevant Indian Standards Specifications, and cable manufacturer's instructions. The cable shall be delivered at site in original drums with manufacturer's name clearly written on the drums. The recommendations of the cable manufacturer with regard to jointing and sealing be strictly followed.

#### 2.2 MATERIAL

The H.T. Cables shall be XLPE insulated FR aluminium conductor armoured cable, PVC inner sheathed, overall PVC sheathed in conformity to latest technical specification and as per latest IS code.

#### 2.3 HT CABLE LAYING

**2.3.1.** The cable shall be laid directly in cable tray clamped with 100mm x 3mm MS flat clamp, in DWS pipe below 750 mm from ground level and in cable trench. The cable laying work will be done as per CPWD specification of electrical works.

##### **2.3.2. Underground Cable Laying procedure**

A trench of about 1.5 meters deep and 45 cm wide is to be dug as per required. Then the trench is to be covered with a 10 cm thick layer of fine sand. The cable is to be laid over the sand bed. The sand bed protects the cable from the moisture from the ground. Then the laid cable shall again be covered with a layer of sand of about 10 cm thick. When multiple cables are to be laid in the same trench, a horizontal or vertical spacing of about 30 cm is to be provided to reduce the effect of mutual heating. Spacing between the cables also ensures a fault occurring on one cable does not damage the adjacent cable. The trench is then to be covered with bricks and soil to protect the cable from mechanical injury.

#### 2.4 INSPECTION.

All cables shall be inspected at site and checked for any damage during transit.

#### 2.5 JOINTS IN CABLES

The Agency shall take care to see that the cables received at site are apportioned to various locations in such a manner as to ensure maximum utilization and avoiding of cable joints. This apportioning shall be got approved from Engineer-In-Charge before the cables are cut to lengths.

### 3.0 LT CABLES

#### 3.1 GENERAL

LT Cables shall be supplied, inspected, laid, tested and commissioned in accordance with specifications, relevant Indian Standards Specifications, and cable manufacturer's instructions. The cable shall be delivered at site in original drums with manufacturer's name clearly written on the drums. The recommendations of the cable manufacturer with regard to jointing and sealing be strictly followed.

### 3.2 MATERIAL

The L.T. Cables shall be XLPE insulated FRLS aluminium conductor armoured cable, PVC inner sheathed, overall PVC sheathed in conformity to latest technical specification and as per latest IS code.

### 3.3 LT CABLE LAYING

3.3.1. The cable shall be laid directly in cable tray clamped with 40mm x 3mm MS flat clamp, in HDPE pipe below 750 mm from ground level and in cable trench. The cable laying work will be done as per CPWD specification of electrical works.

#### 3.3.2. Underground Cable Laying procedure

A trench of about 1.5 meters deep and 45 cm wide is to be dug as per required. Then the trench is to be covered with a 10 cm thick layer of fine sand. The cable is to be laid over the sand bed. The sand bed protects the cable from the moisture from the ground. Then the laid cable shall again be covered with a layer of sand of about 10 cm thick. When multiple cables are to be laid in the same trench, a horizontal or vertical spacing of about 30 cm is to be provided to reduce the effect of mutual heating. Spacing between the cables also ensures a fault occurring on one cable does not damage the adjacent cable. The trench is then to be covered with bricks and soil to protect the cable from mechanical injury.

### 3.4 INSPECTION.

All cables shall be inspected at site and checked for any damage during transit.

### 3.5 JOINTS IN CABLES

The Agency shall take care to see that the cables received at site are apportioned to various locations in such a manner as to ensure maximum utilization and avoiding of cable joints. This apportioning shall be got approved from Engineer-In-Charge before the cables are cut to lengths.

### 4.0 TESTING OF CABLES

4.1 Prior to installation of cables, following tests shall be carried out. Insulation test between phases, phase & neutral, phase & earth for each length of cable.

- a) Before laying
- b) After laying
- c) After jointing

4.2 On completion of cable laying work, the following tests shall be conducted in the presence of the Engineer-in-Charge.

- a) Insulation Resistance Test (Sectional and overall).
- b) Continuity Resistance Test.
- c) Earth Continuity Test.

4.3 All tests shall be carried out in accordance with relevant Indian Standard code of practice and Indian Electricity Rules. The Agency shall provide necessary instruments, equipment's and labour for conducting the above tests & shall bear all expenses of conducting such tests without any extra charge.

- 6.0 **WIRES.** Wiring shall be carried out with FRLS insulated 660/1100-volt grade unsheathed single core wires with electrolytic annealed standard copper (unless otherwise stated) conductors conforming to latest IS Code. All wire rolls shall be ISI marked. All wires shall bear manufacturer's label and shall be brought to site in new and original packages. Manufacturer's certificate, certifying that wires brought to site are of their manufacture shall be furnished as required.

7.0 **EXPANSION JOINTS.**

When crossing through expansion joints in buildings, the conduit sections across the joint shall be through approved quality heavy duty metal flexible conduits of the same size as the rigid conduit. The expansion joint crossing shall be done as approved by Engineer-in-Charge.

7.1 **LOOP EARTHING.**

Loop earthing shall be provided by means of insulated stranded copper conductor wires of sizes as per Schedule of Quantity laid along with wiring inside conduits for all wiring outlets. Earthing terminals shall be provided inside all switch boxes, outlet boxes and draw boxes etc.

8. **PERFORMANCE.**

Should the above tests not comply with the limits and requirements as above the Agency shall rectify the faults until the required results are obtained. The Agency shall be responsible for providing the necessary instruments and subsidiary earths for carrying out the tests. The above tests are to be carried out by the Agency without any extra charge.

9. **MINIATURE CIRCUIT BREAKERS.**

The MCB's shall be of the completely moulded design suitable for operation at 240/415 Volts 50 Hz system. The MCB's shall have a rupturing capacity of 10 KA at 0.5 pf. The MCB's shall have inverse time delayed thermal overload and instantaneous magnetic short circuit protection. The MCB time current characteristic shall coordinate with XLPE cable characteristic. Type test certificates from independent authorities shall be submitted with the RA bill.

**Annexure-B****MAINTENANCE SCHEDULE****(A) TRANSFORMER:**

| SI No.             | Description                                                                                                                                                                                     |
|--------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>WEEKLY</b>      |                                                                                                                                                                                                 |
| 1                  | Clean the transformer with cotton rags.                                                                                                                                                         |
| 2                  | Check that the temperature rise is reasonable.                                                                                                                                                  |
| 3                  | Check the oil level of the transformer.                                                                                                                                                         |
| 4                  | Check colour of Silica Gel, Oil level of dust cup.                                                                                                                                              |
| 5                  | Checking of any oil leakage                                                                                                                                                                     |
| <b>QUARTERLY</b>   |                                                                                                                                                                                                 |
| 1                  | HT and LT Bushing: Examine for crakes and dirt deposits, clean or replace.                                                                                                                      |
| 2                  | Cooling fan bearings, motors, and operating mechanism: Lubricate bearings, examine contacts, check manual control and interlocks.                                                               |
| 3                  | Checking of OLTC and RTCC panel operation in manual and auto mode.                                                                                                                              |
| 4                  | Checking the AVR in both manual and auto mode. Checking and replacement of required spares including carbon rollers.                                                                            |
| 5                  | Checking the colour of silica gel in the breather and also oil level of the oil seal. If silica gel colour changes from blue to pink by 50% the silica gel is to be reconditioned or replaced.  |
| <b>HALF-YEARLY</b> |                                                                                                                                                                                                 |
| 1                  | Oiling and greasing of transformer tap changer.                                                                                                                                                 |
| 2                  | Oil of Transformer, AVR, OLTC: Check for dielectric strength and water content.                                                                                                                 |
| 3                  | Check the resistance of all earth pits and mention on earth pits cover plate.                                                                                                                   |
| 4                  | Oil top-up if required                                                                                                                                                                          |
| 5                  | Check oil leak from OLTC & AVR and repair/ Replacement gasket if required                                                                                                                       |
| <b>YEARLY</b>      |                                                                                                                                                                                                 |
| 1                  | Oil of transformer, AVR, OLTC: Check for dielectric strength, water content & tan-delta                                                                                                         |
| 2                  | Gasket joints: Tighten the bolts evenly to avoid uneven pressure.                                                                                                                               |
| 3                  | Cable boxes: Check for sealing arrangements for filling holes. Examine compound for crakes. Replace the gasket if leaking.                                                                      |
| 4                  | Relay, Alarms, their circuits, etc: Examine relay and alarm contacts, their operation, fuse, etc, check relay accuracy, etc. Clean the components and: replace contacts and fuses if necessary. |
| 5                  | Earth resistance: Record the value of earth resistance of earth pits.                                                                                                                           |
| 6                  | Silica gel: Replacement of silica gel and cup oil.                                                                                                                                              |
| 7                  | Buchholz & magnetic oil gauge relay: Check its operation, control circuit, and repair/replace if required.                                                                                      |
| 8                  | Checking the mechanism RTCC and replacement of required spares                                                                                                                                  |

|    |                                                                                                                                         |
|----|-----------------------------------------------------------------------------------------------------------------------------------------|
| 9  | Testing of AVR in both manual and auto mode. Checking the mechanism of AVR and replacement of required spares including carbon rollers. |
| 8  | Check for any deposit of sludge in the transformer, and AVR oil tank.                                                                   |
| 9  | Winding resistance, PI, IR, Turn Ratio, Magnetizing Balance, Vector Group Test,                                                         |
| 10 | Calibration of MOG & MOT                                                                                                                |

**(B) HT Panel**

| SI No.             | Description                                                                                                                                                    |
|--------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>DAILY</b>       |                                                                                                                                                                |
| 1                  | Measure and record the incoming/outgoing voltage, current, Power factor, and energy, for all Panel                                                             |
| 2                  | Vacuuming and cleaning of the rooms and surrounding areas.                                                                                                     |
| 3                  | check for proper operation of HT panel                                                                                                                         |
| 4                  | Check for proper closing of the panel so that no space should be left which may allow entering the lizard or insects. If any holes in the panel then close it. |
| 5                  | Checking of Indicating lamps, Door lock, and door hinge.                                                                                                       |
| <b>WEEKLY</b>      |                                                                                                                                                                |
| 1                  | Examination of auxiliary switches, indicating devices and interlocks to ensure that they are in good order physically.                                         |
| 2                  | Cleaning of metallic enclosure, Cleaning of panel externally.                                                                                                  |
| 4                  | Checking of control circuit & tighten the connections if any required                                                                                          |
| 5                  | Check whether indication lamps, annunciator lights, buzzers, and hooters are working.                                                                          |
| 6                  | General cleaning Outside of the panel.                                                                                                                         |
| <b>QUARTERLY</b>   |                                                                                                                                                                |
| 1                  | Checking of indicating lamps, TVM meter and energy meter along with selector switches i/c replacement of defective ones.                                       |
| 2                  | Checking of operation of breakers for trip/close.                                                                                                              |
| 3                  | Check fixed and moving contacts.                                                                                                                               |
| 4                  | Cleaning of panel internally.                                                                                                                                  |
| 5                  | Checking the humidity.                                                                                                                                         |
| 6                  | Cleaning of contacts of breaker.                                                                                                                               |
| 7                  | Clean the panels from the inside with the help of the blower/ vacuum cleaners                                                                                  |
| 8                  | Rectification of DC leakage in the control circuit.                                                                                                            |
| <b>HALF-YEARLY</b> |                                                                                                                                                                |
| 1                  | Cleaning of contacts of breakers and inserting petroleum jelly in contacts.                                                                                    |
| 2                  | Oiling and greasing of operating mechanism etc.                                                                                                                |
| 3                  | Visual check of earth connections and tightening if reqd.                                                                                                      |
| 4                  | Calibration of indicating/ measuring meter.                                                                                                                    |
| 5                  | Checking of D.C. supply & control switchgear                                                                                                                   |
| 6                  | Check the operation of MCB, relays, Etc.,                                                                                                                      |

|               |                                                                                                                                  |
|---------------|----------------------------------------------------------------------------------------------------------------------------------|
| 7             | Checking of interlocking.                                                                                                        |
| 8             | Check close & trip coil of VCB                                                                                                   |
| 9             | Check auxiliary supply and control voltage.                                                                                      |
| 10            | Check Space Heater and replace if required                                                                                       |
| <b>YEARLY</b> |                                                                                                                                  |
| 1             | Checking of control circuits and its accessories i.e. aux contractors, closing/tripping coil, spring charge motor of VCB.        |
| 2             | Cleaning of contacts with CRC, indicating devices, TVM meter, Energy meter, selector switch etc. and replace if required.        |
| 3             | Oil and greasing of operating mechanism.                                                                                         |
| 4             | Checking, calibrating and repairing of all meters i.e. TVM meter and energy meter.                                               |
| 5             | Testing of PT- Insulation resistance test, Ratio Test by Primary injection, Polarity Test, etc.                                  |
| 6             | Checking of each relay for its correct operation by secondary injection.                                                         |
| 7             | Testing of CT- Insulation resistance test, Ratio Test by Primary injection, HI-pot test, Knee point voltage test for PS class CT |
| 8             | Testing and calibration of relays.                                                                                               |
| 9             | Checking of current/voltage setting as per recommended setting.                                                                  |
| 10            | Timing test of VCB.                                                                                                              |
| 11            | IR test of VCB.                                                                                                                  |
| 12            | HI-Pot Test of VCB                                                                                                               |
| 13            | Closing & Opening Timing Test for all three poles of VCB.                                                                        |
| 14            | Hi-pot test of cables (HT panel to Transformer).                                                                                 |
| 15            | CRM test of VCB.                                                                                                                 |

**(C) LT PANEL AND ATS:**

| SI No.        | Description                                                                                                       |
|---------------|-------------------------------------------------------------------------------------------------------------------|
| <b>DAILY</b>  |                                                                                                                   |
| 1             | Measure and record the incoming/outgoing voltage, current, Power factor, and energy, of all Panel                 |
| 2             | Vacuuming and cleaning the rooms and surrounding areas.                                                           |
| 3             | check for proper operation of LT panel and ATS                                                                    |
| 4             | Check for proper closing of panel so that no space should be left which may allow entering the lizard or insects. |
| 5             | Checking of Indicating lamps, door locks, and door hinges, replace if required.                                   |
| <b>WEEKLY</b> |                                                                                                                   |
| 1             | Cleaning of panel externally.                                                                                     |
| 2             | General cleaning inside of the panel.                                                                             |
| 3             | Checking of Indicating lamps, earthing connection etc.                                                            |
| 4             | Check whether all relays, are functioning properly.                                                               |
| 5             | Checking of indicating lamp, door lock, door hinge etc., and replace if required                                  |

|                    |                                                                                                                            |
|--------------------|----------------------------------------------------------------------------------------------------------------------------|
| 6                  | Check the tightness of all wiring and terminals of all panels.                                                             |
| <b>QUARTERLY</b>   |                                                                                                                            |
| 1                  | Checking of indicating lamps, MFM, and energy meter along with selector switches i/c replacement of defective ones.        |
| 2                  | Checking of operation of breakers for trip/close.                                                                          |
| 3                  | earthing connection of panels, check the value of the earth pit, and mention the resistance value on earth pits            |
| 4                  | Cleaning of panels internally and externally.                                                                              |
| 5                  | Rectification of DC leakage in the control circuit.                                                                        |
| 6                  | Checking the humidity                                                                                                      |
| 7                  | Checking presence and proper tightening of hardware.                                                                       |
| 8                  | Auxiliary contacts cleaning.                                                                                               |
| 9                  | Cleaning of breaker with CRC2-26                                                                                           |
| 10                 | Servicing of breakers.                                                                                                     |
| 11                 | Checking proper tightening of control cables at sliding contact of fixed part & moving part of draw out type ACB and MCCB. |
| 12                 | Checking continuity & proper changeover of Aux contact block.                                                              |
| 13                 | Checking condition & operation of safety shutters of draw-out type ACB.                                                    |
| 14                 | The setting of release as per the load                                                                                     |
| 15                 | Checking the proper function of the Mechanism.                                                                             |
| 16                 | Check programmable logic controller (PLC) to avoid parallel operation and replace if required.                             |
| 17                 | Cleaning of main and auxiliary contact of contactors and overhauling of exhaust fans.                                      |
| <b>HALF-YEARLY</b> |                                                                                                                            |
| 1                  | Checking of interlocking.                                                                                                  |
| 2                  | Checking of control circuit and its accessories (I.E. aux contacts, connections, coils etc.).                              |
| 3                  | Visual check of earth connections and tightening if reqd.                                                                  |
| 4                  | Cleaning of contacts of breakers and inserting petroleum jelly in contacts.                                                |
| 5                  | Check the operation of MCB, MCCB and relays, Etc.                                                                          |
| 6                  | Checking of CT, PT and Relays connections for tightness                                                                    |
| 7                  | Oiling and greasing of operating mechanism etc.                                                                            |
| 8                  | Calibration of indicating/ measuring meter.                                                                                |
| 9                  | Check panel exhaust fans and replace if required                                                                           |
| 10                 | Checking of D.C. supply & control switchgear.                                                                              |
| 11                 | Check close and Trip coil                                                                                                  |
| 12                 | Clean the cable chamber, check cable end termination and tightness if required.                                            |
| 13                 | Checking ACB tripping through under voltage release.                                                                       |
| 14                 | Checking ACB tripping through shunt opening release.                                                                       |
| 15                 | Checking ACB spring charging through spring charging motor.                                                                |
| 16                 | Checking condition & healthiness of the CTs & its connectors                                                               |

|               |                                                                                                                                            |
|---------------|--------------------------------------------------------------------------------------------------------------------------------------------|
| 17            | Checking of reset mechanism & operation of anti-pumping lever of ACB                                                                       |
| 18            | physical & mechanical inspection of Bus Duct joint, repair if required                                                                     |
| 19            | Checking condition of arcing contact and gap between fixed & moving arcing contacts shall be checked & adjusted as per the recommendations |
| 20            | Checking condition & proper alignment of sliding contact of moving part with respect to fixed part of draw out type ACB                    |
| 21            | Removal of old grease and re-greasing the same with recommended grease.                                                                    |
| <b>YEARLY</b> |                                                                                                                                            |
| 1             | Checking, tightening and up-keeping the insulation of main bus bar and cable connection.                                                   |
| 2             | Oil and greasing of operating mechanism.                                                                                                   |
| 3             | Cleaning of contacts with CTC, indicating devices, voltmeter, ammeter, MFM, selector switch etc. and replace if required.                  |
| 4             | Checking of CT and PT's etc.                                                                                                               |
| 5             | Checking and recording of earth resistance value.                                                                                          |
| 6             | physical & mechanical inspection of Bus Duct joint, repair if required                                                                     |
| 7             | Measure insulation resistance of each bus Duct & individual joint.                                                                         |
| 8             | Resistance measurements through bolted connections and bus duct with a low-resistance ohmmeter.                                            |
| 9             | Checking of tightness/torque of terminals of Bus duct                                                                                      |
| 10            | Testing of IR value of cables from (1) Transformer to LT panel, (2) LT panel to Electrical room of respective building                     |
| 11            | Check programmable logic controller (PLC) to avoid parallel operation and replace if required.                                             |
| 12            | Checking, calibrating and repairing of all meters i.e. voltmeter, ammeter, MFM, and energy meter.                                          |
| 13            | Checking of control circuits and its accessories i.e. aux contractors, closing/tripping coil, spring charge motor.                         |
| 14            | Releases test of MCCB & ACB                                                                                                                |
| 15            | CRM test of ACB                                                                                                                            |
| 16            | Testing and calibration of relays.                                                                                                         |
| 17            | Testing of all panel Relays and Meters                                                                                                     |
| 18            | Checking of each relay for its correct operation by secondary injection                                                                    |
| 19            | Checking the healthiness of Jaw contact & Cradle terminals.                                                                                |

**(D) BATTERY CHARGER:**

| Sl No.        | Description                                                                       |
|---------------|-----------------------------------------------------------------------------------|
| <b>DAILY</b>  |                                                                                   |
| 1             | Checking and recording of the cell value in battery log book.                     |
| <b>WEEKLY</b> |                                                                                   |
| 1             | Cleaning of battery charger and performing visual inspection for any abnormality. |

|                    |                                                                          |
|--------------------|--------------------------------------------------------------------------|
| <b>2</b>           | Checking of batteries i.e. electrolyte levels spherisation of contracts. |
| <b>3</b>           | Checking indicating lamps, replace/repair if required.                   |
| <b>QUARTERLY</b>   |                                                                          |
| <b>1</b>           | To check the voltage of each battery and record.                         |
| <b>2</b>           | To check the operation of the charger (Boost + Float)                    |
| <b>HALF-YEARLY</b> |                                                                          |
| <b>1</b>           | To check value of specific gravity of electrolyte of each battery.       |
| <b>2</b>           | To remove sulphurisation and insert petroleum jelly.                     |
| <b>3</b>           | Connection tighten of battery charger.                                   |
| <b>ANUALLY</b>     |                                                                          |
| <b>1</b>           | Internally cleaning with vacuum cleaner.                                 |
| <b>2</b>           | Tightening of all connections.                                           |
| <b>3</b>           | Checking of the operation of all switches.                               |

**(E) EARTHING SYSTEM:**

| <b>Sl No.</b>      | <b>Description</b>                                                                                                                                                                                                  |
|--------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>MONTHLY</b>     |                                                                                                                                                                                                                     |
| <b>1</b>           | Cleanliness of earth pit/area                                                                                                                                                                                       |
| <b>2</b>           | Check the condition of earth pit cover.                                                                                                                                                                             |
| <b>3</b>           | Watering the earth pit.                                                                                                                                                                                             |
| <b>HALF-YEARLY</b> |                                                                                                                                                                                                                     |
| <b>1</b>           | Check the condition of Watering Funnel.                                                                                                                                                                             |
| <b>2</b>           | Watering, earthing chemical, charcoal & salt refill and cleaning of earthing pits.                                                                                                                                  |
| <b>3</b>           | Check earth resistance and record. The earth resistance value and test date shall be mentioned by the paint on the earth pit cover.                                                                                 |
| <b>4</b>           | Check tightness of earth connections & continuity.                                                                                                                                                                  |
| <b>5</b>           | Check continuity of main earthing lead from earth pit to panel/equipment.                                                                                                                                           |
| <b>6</b>           | Changing nuts & bolts in case of rust.                                                                                                                                                                              |
| <b>Note:-</b>      |                                                                                                                                                                                                                     |
| <b>1</b>           | These activities and periodicity are minimum.                                                                                                                                                                       |
| <b>2</b>           | Any missing activities can be incorporated and implemented.                                                                                                                                                         |
| <b>3</b>           | The periodicity of maintenance depends on the number of hours of operation, life of the equipment and the climatic conditions. Hence, based on these the periodicity could be further improved, if found necessary. |
| <b>4</b>           | On checking the individual parameters deficiency found shall be rectified immediately in a time bound manner.                                                                                                       |

**(G) CAPACITOR PANEL:**

| SI No.             | Description                                                                                                                 |
|--------------------|-----------------------------------------------------------------------------------------------------------------------------|
| <b>WEEKLY</b>      |                                                                                                                             |
| 1                  | Checking of indicating lamps, KWH meter, Ammeter, Voltmeter, APFC meter along with selector switch                          |
| 2                  | Checking of earthing connection of panels.                                                                                  |
| 3                  | cleaning of external panel.                                                                                                 |
| 4                  | Check and record the value of voltage, current, power factor etc. in Capacitor panel log book.                              |
| 5                  | All door needs to be closed properly and no space should be left which may allow the lizard or insects to enter             |
| 6                  | visual inspection of contractors.                                                                                           |
| 7                  | exhaust fan & APFC relay for any abnormality                                                                                |
| <b>QUARTERLY</b>   |                                                                                                                             |
| 1                  | Internal & external cleaning of panel.                                                                                      |
| 2                  | Tightening of connection busbar and cable connection (outgoing)                                                             |
| 3                  | Checking of APFC relay for proper functioning and repair if required.                                                       |
| 4                  | Auxiliary contacts, indicating devices, voltmeter, ammeter, and selector switch etc. check and repair/ replace if required. |
| 5                  | Instrument & current transformer to be checked.                                                                             |
| 6                  | Checking of contactors and ACB, MCCB.                                                                                       |
| <b>HALF-YEARLY</b> |                                                                                                                             |
| 1                  | Auxiliary contacts, indicating devices, voltmeter, ammeter, and selector switch etc. check and repair/replace if required.  |
| 2                  | Instrument, Current transformer & potential transformer to be checked.                                                      |
| 3                  | Cleaning of main and auxiliary contact of contactors and overhauling of exhaust fans.                                       |
| 4                  | Tightening of connection busbar and cable connection                                                                        |
| 5                  | Checking and replacing of defective capacitors.                                                                             |
| 6                  | Checking of APFC relay for their function.                                                                                  |
| <b>YEARLY</b>      |                                                                                                                             |
| 1                  | Servicing and all testing of ACB & MCCB.                                                                                    |
| 2                  | Operation checking of ACB & MCCB                                                                                            |
| 3                  | Servicing of contactors, FSU/SFU.                                                                                           |
| 4                  | Checking and testing of APFC relay for their function.                                                                      |

### (I) EXTERNAL LIGHT

| SL No.         | Description                                            |
|----------------|--------------------------------------------------------|
| <b>DAILY</b>   |                                                        |
| 1              | Visual check of All external light and repair if reqd. |
| 2              | Checking of Feeder pillar panel                        |
| 3              | Cable joint by jointing kit if required                |
| 4              | Checking of cable fault and laying cable if required   |
| <b>MONTHLY</b> |                                                        |

|                    |                                                                                                                   |
|--------------------|-------------------------------------------------------------------------------------------------------------------|
| 1                  | Cleaning of Feeder Pillar panel and high mast panel externally.                                                   |
| 2                  | Checking of interlocks.                                                                                           |
| 3                  | Check for proper closing of panel so that no space should be left which may allow to enter the lizard or insects. |
| 4                  | Checking of earthing connection of feeder pillar panel and High mast panel                                        |
| 5                  | Checking of MCB and MCCB.                                                                                         |
| 6                  | Check door lock and hinge replace if required                                                                     |
| <b>QUARTERLY</b>   |                                                                                                                   |
| 1                  | Cleaning of feeder pillar and high mast panel externally.                                                         |
| 2                  | Checking of wire and cable connections of Feeder pillar and high mast panel.                                      |
| 3                  | Preventive maintenance of MCB and MCCB.                                                                           |
| 4                  | Check Motor chains and sprockets of High Mast.                                                                    |
| 5                  | Check High Mast rope, rope clamp.                                                                                 |
| <b>HALF-YEARLY</b> |                                                                                                                   |
| 1                  | Checking of high mast motoring system.                                                                            |
| 2                  | Preventive maintenance of High mast and Feeder pillar panel.                                                      |
| 3                  | Check aviation light replace if required                                                                          |
| 4                  | Check Gearbox oil of high mast.                                                                                   |
| <b>YEARLY</b>      |                                                                                                                   |
| 1                  | Check Gearbox oil of high mast, it must be replaced with new oil once a year                                      |

**(F) DG Set:**

| SI No.        | Description                                                                                                                      |
|---------------|----------------------------------------------------------------------------------------------------------------------------------|
| <b>DAILY</b>  |                                                                                                                                  |
| 1             | maintenance logbook and log all alarm operations and output                                                                      |
| 2             | Check environment, temperature, dust, moisture, room vents, etc.                                                                 |
| 3             | Check coolant heater, oil level, coolant level, fuel level                                                                       |
| 4             | Any visible coolant leakages to be arrested.                                                                                     |
| 5             |                                                                                                                                  |
| 6             | Check Battery voltage.                                                                                                           |
| 7             | Check charge air piping.                                                                                                         |
| <b>WEEKLY</b> |                                                                                                                                  |
| 1             | Check air cleaner.                                                                                                               |
| 2             | Check battery charger.                                                                                                           |
| 3             | Drain fuel filter.                                                                                                               |
| 4             | Checking of wire connections and proper functioning of self-starter                                                              |
| 5             | Drain water from fuel tank.                                                                                                      |
| 6             | Checking visually the exhaust smoke (Level/colour)                                                                               |
| 7             | Checking for the proper functioning of sensors and safety controls by checking the Connection and terminal and visual inspection |
| 8             | Any visible coolant leakages to be arrested.                                                                                     |
| 9             | Checking of battery charger.                                                                                                     |

|                    |                                                                                                               |
|--------------------|---------------------------------------------------------------------------------------------------------------|
| 10                 | Checking the wiring, proper functioning of the meters and selector switches                                   |
| <b>MONTHLY</b>     |                                                                                                               |
| 1                  | Check coolant concentration.                                                                                  |
| 2                  | Inspection of Inline fuel filter system.                                                                      |
| 3                  | Drain exhaust condensate.                                                                                     |
| 4                  | Check starting batteries.                                                                                     |
| 5                  | Checking and adjustment of belt tension fan.                                                                  |
| 6                  | Checking/cleaning of the fuel tank Breather.                                                                  |
| 7                  | Check A.C. wiring, exciter stator, overspeed switch.                                                          |
| 8                  | Checking of lube oil pressure.                                                                                |
| 9                  | Checking the condition of the battery for sulphonation, tightness of connections.                             |
| 10                 | Checking of proper functioning of self-starter and manual starter.                                            |
| 11                 | Checking visually the exhaust smoke (Level/colour)                                                            |
| 12                 | Check the conditions of motors shaft & belts.                                                                 |
| 13                 | Measurement of voltage, load current, lube oil pressure, coolant temp, engine temp, frequency, RPM of DG sets |
| 14                 | Logbook of diesel stoke and uses                                                                              |
| 15                 | Checking of earthing connection of DG Sets and DG panel                                                       |
| <b>HALF-YEARLY</b> |                                                                                                               |
| 1                  | Check radiator fins, water separator, coolant level, etc.                                                     |
| 2                  | Checking of proper functionality of canopy light, door lock self-starter and stop solenoid and other gauges.  |
| 3                  | Clean crankcase breather.                                                                                     |
| 4                  | Check Belt tension & condition of water pump, pulley drive & fan, etc.                                        |
| 5                  | Check radiator hoses.                                                                                         |
| 6                  | Checking of any Exhaust leakages                                                                              |
| 7                  | Checking of fuel tank & piping, exhaust silencer & exhaust piping.                                            |
| <b>YEARLY</b>      |                                                                                                               |
| 1                  | Clean cooling systems.                                                                                        |
| 2                  | Checking for the proper functioning of the instruments on the dashboard/PCC.                                  |
| 3                  | Check inhibitor corrosion (coolant) level                                                                     |
| 4                  | General cleaning of the alternator with hand blower                                                           |
| 5                  | Checking of proper conditions of vacuum indicator.                                                            |
| 6                  | Cleaning and washing of DG sets oil tank etc.                                                                 |
| 7                  | Checking of fuel tank & piping, exhaust silencer & exhaust piping.                                            |

#### (H) DG Synchronization panel

| Sl No.        | Description                                                                                                       |
|---------------|-------------------------------------------------------------------------------------------------------------------|
| <b>WEEKLY</b> |                                                                                                                   |
| 1             | Cleaning of panel externally.                                                                                     |
| 2             | Check for proper closing of panel so that no space should be left which may allow entering the lizard or insects. |
| 3             | Checking of Indicating lamps, earthing connection etc.                                                            |
| 4             | Check whether all relays are functioning properly.                                                                |

|                    |                                                                                                                  |
|--------------------|------------------------------------------------------------------------------------------------------------------|
| 5                  | Checking of interlocks.                                                                                          |
| 6                  | maintenance logbook of DG sets and Diesel consumption record                                                     |
| <b>QUARTERLY</b>   |                                                                                                                  |
| 1                  | Checking of indicating lamps, ammeter, voltmeter and energy meter etc.                                           |
| 2                  | Checking of operation of breakers for trip/close.                                                                |
| 3                  | earthing connection of panels, and earth resistance                                                              |
| 4                  | Cleaning of panel internally.                                                                                    |
| 5                  | Checking of all annulation facia and hooter.                                                                     |
| 6                  | Rectification of DC leakage in control circuit.                                                                  |
| 7                  | Checking the humidity                                                                                            |
| 8                  | Checking of operation.                                                                                           |
| <b>HALF-YEARLY</b> |                                                                                                                  |
| 1                  | Checking of interlocking.                                                                                        |
| 2                  | Checking of control circuit and its accessories (I.E. aux contacts, connections, coils etc.).                    |
| 3                  | Visual check of earth connections and tightening if reqd.                                                        |
| 4                  | Cleaning of contacts of breakers and inserting petroleum jelly in contacts.                                      |
| 5                  | Check the operation of MCB, relays, Etc.                                                                         |
| 6                  | Checking of CT, PT and Relays connections for tightness                                                          |
| 7                  | Oiling and greasing of operating mechanism etc.                                                                  |
| 8                  | Checking of D.C. supply & control switchgear.                                                                    |
| 9                  | Check close and Trip coil                                                                                        |
| 10                 | Clean the cable chamber, check cable end termination and tightness if required.                                  |
| <b>YEARLY</b>      |                                                                                                                  |
| 1                  | Checking, tightening, and up-keeping the insulation of main bus bar and cable connection.                        |
| 2                  | Oil and greasing of operating mechanism.                                                                         |
| 3                  | Cleaning of contacts with CTC, indicating devices, voltmeter, ammeter, selector switch etc.                      |
| 4                  | Checking of CT and PT's etc.                                                                                     |
| 5                  | Checking and recording of earth resistance value.                                                                |
| 6                  | Checking of control circuits and its accessories i.e aux contactors, closing/tripping coil, spring charge motor. |

**(J) ONLINE UPS**

| SL. No.      | Description |
|--------------|-------------|
| <b>DAILY</b> |             |

|                  |                                                                                                                              |
|------------------|------------------------------------------------------------------------------------------------------------------------------|
| 1                | Checking and recording of the cell value in battery log book.                                                                |
| 2                | Measure and record the incoming/outgoing voltage, current, Power factor and energy, of all Panel                             |
| 3                | Check environment, temperature, dust, moisture, room vents, etc.                                                             |
| 4                | Checking of Indicating lamps.                                                                                                |
| <b>MONTHLY</b>   |                                                                                                                              |
| 1                | Conduct a visual inspection of the UPS, making sure the overall environment is clean and free of dust and debris.            |
| 2                | Check switchgear and circuit breakers, meters, and alarm levels for frequency, voltage, current, transfer, trip, alarm, etc. |
| 3                | Measure the ambient temperature.                                                                                             |
| 4                | Cleaning of panel externally.                                                                                                |
| <b>QUARTERLY</b> |                                                                                                                              |
| 1                | Visually inspect equipment for loose connections, burned insulation or any other signs of wear.                              |
| 2                | Measure the voltage of each cell or battery block.                                                                           |
| 3                | Visual check of earth connections and tightening if reqd.                                                                    |
| 4                | Check all wiring and terminals are tight.                                                                                    |
| 5                | Visually check for liquid contamination from batteries and capacitors                                                        |

**Annexure - A**

**LIST OF EQUIPMENTS**  
**(Technical specification with quantity)**

**1. 33kV HT Panel**

| <b>LIST OF EQUIPMENTS</b>                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                             |             |            |
|----------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------|-------------|------------|
| <b>Technical specification with quantity</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                             |             |            |
| <b>item No.</b>                              | <b>Description</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | <b>Make</b>                                 | <b>Unit</b> | <b>Qty</b> |
| <b>1</b>                                     | <b>33KV H.T. Panel Board</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                             |             |            |
| <b>1.1</b>                                   | <b>33KV H.T. Panel Board (Sub Station-1)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                             | SETS        | 1          |
|                                              | Operation & Comprehensive Maintenance Contract of 20 KA, 33 kV, 50 HZ breaker and control & relay panel board, totally enclosed, single bus bar, floor mounting, metal clad, indoor, extensible type, flush mounted, horizontal draw out, vertical isolation type vacuum circuit breaker consisting of following equipment complete with internal wiring, circuit lables, Epoxy sealing kits and painted finish with light gray (as per relevant IS).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                             |             |            |
|                                              | <b>Incomer:</b> 2 nos. 800A 33 kV, 20 KA vacuum circuit breaker with the following: - Housing for circuit breaker carriage, 3 no. poles, operation counter, auxiliary contacts of 8 NO + 8NC, 230V AC single phase motor for spring charging, Closing coil & shunt trip coils rated for 24V DC, closing of breaker- manual by push button/switch, Tripping of breaker- manual by push button/switch and through relay, closure of breaker possible only in test and service positions in the panel, Bus bar chamber including a set of 3 phase 630A copper bus bar,. 2 set of 240V AC single phase space heater with switch, 2 Set of feeder/bus bar connected VT each incorporating 3 phase, 3 limb, withdrawable type oil immersed voltage transformer having a ratio of 33000/110V and burden of 100VA, accuracy class of 0.5 as per relevant BS. the VT should be complete with HRC fuses on primary and secondary sides respectively. 2 set of current transformer incorporating 3 single phase resin cast double core CTs of suitable burden of 15VA each with ratio 350/5/5A with accuracy class 0.5/5P10, as per relevant BS. 2 set of TVM (with KWH meter, PF meter, ammeter voltmeter, etc.). 2 set of relay -triple pole, non-instantaneous, non-directional IDMTL relay having 2 elements for over current setting 50%-200% and 1 element for earth fault protection setting 10%-40%. three nos. of red and green & amber lamps for ON/OFF/TRIP indication. 2 set of inverse time over current and earth fault relay. 2 set of master Trip relay, 2 set of trip circuit supervision relay. Test terminal block, fuse, circuit labels, indication lamps, push button, etc. as per standard practice with all necessary wiring including all interconnections. Necessary Trip circuit supply Healthy indication lamp and switch. | Panels-<br>SCHNEIDER<br>, VCB-<br>SCHNEIDER |             |            |
|                                              | <b>Bus Bar:</b> 800 A, 33KV, 3 Phase, 20KA for 1 sec, 50 HZ, 3 strip copper busbar.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                             |             |            |

|     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                       |             |          |
|-----|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------|-------------|----------|
|     | <p><b>Outgoing:</b> - 9 Nos. 33 kV, 800A, 20 KA VCB complete with the following: - Housing for circuit breaker carriage, 3 no. poles. Operation counter, Auxiliary contacts of 8 NO + 8 NC, 230V AC single phase motor for spring charging, closing coil &amp; shunt trip coils rated for 24V DC. Closing of breaker - manual by push button/switch, Tripping of breaker - manual by push button/switch and through relay, Closure of breaker possible only in test and service positions in the Panel, Bus bar chamber including a set of 3 phase 630A Copper bus bar. 9 sets of 240V AC single phase space heater with switch. 3 sets of current transformer incorporating 3 single phase resin cast double core CTS of suitable burden of 15 VA each of 90/5/5A ratio with accuracy class 0.5/5P10, as per relevant BS. 6 sets of current transformer incorporating 3 single phase resin cast double core CTS of suitable burden of 15 VA each of 50/5/5A ratio with accuracy class 0.5/5P10, as per relevant BS. 9 sets of rear cable termination: one for power cable and other for control cable. 9 sets of TVM (with KWH meter, PF meter, ammeter voltmeter, etc.) 9 sets of relay - triple pole, non-instantaneous, non-directional IDMTL relay each having 2 elements for over current setting 50%-200% and 1 element for earth fault protection setting 10%-40%. 9 sets of red and green &amp; amber lamps for ON/OFF/TRIP indication. 9 sets of Master Trip relay. 9 sets of trip circuit supervision relay. Test terminal block fuses, circuit labels, indication lamps, push button, etc. as per Necessary Trip Circuit Supply Healthy indication lamp and switch, Auxiliary relays, Solid State annunciator in all outgoing Panels controlling the transformers with all necessary conditions.</p> |                                                       |             |          |
|     | <p>Bus coupler: - 1 set of 800A, 33kV VCB bus coupler complete with the following: - Housing for circuit breaker carriage, 3 no. poles, operation counter, auxiliary contacts of 8 NO + 8 NC, 230V AC single phase motor for spring charging, closing coil &amp; shunt trip coils rated for 24V DC, closing of breaker- manual by push button/switch. Tripping of breaker- manual by push button/switch and through relay, closure of breaker possible only in test and service positions in the panel, Bus bar chamber including a set of 3 phase 630A copper bus bar. 1 set of 240V AC single phase space heater with switch. 1 set of red and green &amp; amber lamps for ON/OFF/TRIP indication. 1 set of Master Trip relay, 1 set of trip circuit supervision relay.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                       |             |          |
| 1.2 | <p><b>33KV H.T. Panel Board (Sub-Station- 2)</b></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                       |             |          |
|     | <p>Comprehensive Maintenance Contract of 20 KA, 33 kV, 50 HZ breaker and control &amp; relay Panel board, totally enclosed, single bus bar, floor mounting, metal clad, indoor, extensible type, flush mounted, horizontal draw out, vertical isolation type vacuum circuit breaker consisting of following equipment complete with internal wiring, circuit lables, Epoxy sealing kits and painted finish with light gray (as per relevant IS).</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | <p>Panels-<br/>SCHNEIDER<br/>, VCB-<br/>SCHNEIDER</p> | <p>SETS</p> | <p>1</p> |

|  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |  |  |
|--|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|
|  | <p><b>Incomer:</b> 2 nos. 800A 33 kV, 20 KA vacuum circuit breakers complete with the following:- Housing for circuit breaker carriage, 3 no. poles, operation counter, auxiliary contacts of 8 NO + 8NC, 230V AC single phase motor for spring charging, Closing coil &amp; shunt trip coils rated for 24V DC, closing of breaker- manual by push button/switch. Tripping of breaker- manual by push button/switch and through relay, closure of breaker possible only in test and service positions in the panel, Bus bar chamber including a set of 3 phase 630A copper bus bar, 2 set of 240V AC single phase space heater with switch, 2 Set of feeder/bus bar connected VT each incorporating 3 phase, 3 limb, withdrawable type oil immersed voltage transformer having a ratio of 33000/110V and burden of 100VA, accuracy class of 0.5 as per relevant BS. the VT should be complete with HRC fuses on primary and secondary sides respectively. 2 set of current transformer incorporating 3 single phase resin cast double core CTs of suitable burden of 15VA each with ratio 90/5/5A with accuracy class 0.5/5P10, as per relevant BS. 2 set of TVM (with KWH meter, PF meter, ammeter voltmeter, etc.), 2 set of relay -triple pole, non-instantaneous, non-directional IDMTL relay having 2 elements for over current setting 50%-200% and 1 element for earth fault protection setting 10%-40%. three nos. of red and green &amp; amber lamps for ON/OFF/TRIP indication. 2 set of inverse time over current and earth fault relay. 2 set of master Trip relay, 2 set of trip circuit supervision relay. Test terminal block, fuse, circuit labels, indication lamps, push button, etc. as per standard practice with all necessary wiring including all interconnections. Necessary Trip circuit supply Healthy indication lamp and switch.</p> |  |  |  |
|  | <p>Bus Bar:800 A, 33KV, 3 phase, 20KA for 1 sec, 50 HZ, 3 strip copper busbar.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |  |  |
|  | <p><b>Outgoing:</b> - 2 Nos. 33 kV, 800A, 20 KA VCB complete with the following: - Housing for circuit breaker carriage, 3 no. poles., Operation counter, Auxiliary contacts of 8 NO + 8 NC, 230V AC single phase motor for spring charging, closing coil &amp; shunt trip coils rated for 24V DC. Closing of breaker - manual by push button/switch, Tripping of breaker - manual by push button/switch and through relay, Closure of breaker possible only in test and service positions in the Panel, Bus bar chamber including a set of 3 phase 630A Copper bus bar. 2 sets of 240V AC single phase space heater with switch. 2 sets of current transformer incorporating 3 single phase resin cast double core CTS of suitable burden of 15 VA each of 50/5/5A ratio with accuracy class 0.5/5P10, as per relevant BS. 2 sets of current transformer incorporating 3 single phase resin cast double core CTS of suitable burden of 15 VA each of 50/5/5A ratio with accuracy class 0.5/5P10, as per relevant BS. 2 sets of rear cable termination; one for power cable and other for control cable. 2 sets of TVM (with KWH meter, PF meter, ammeter voltmeter, etc.) 2 sets of relay - triple pole, non-instantaneous, non-directional IDMTL relay each having 2 elements for over current setting 50%-200% and 1 element for earth fault protection setting 10%-40%. 2 sets of red and green &amp; amber lamps for ON/OFF/TRIP indication. 2 sets of Master Trip relay. 2 sets of trip circuit supervision relay. Test terminal block fuses, circuit labels, indication lamps, push button, etc. as per standard practice complete with all Necessary Trip Circuit Supply Healthy indication lamp and switch, Auxiliary relays, Solid State annunciator in all outgoing Panels controlling the transformers with all necessary conditions.</p>            |  |  |  |

|  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |  |  |  |
|--|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|
|  | <b>Bus coupler:-</b> 1 set of 800A, 33kV VCB bus coupler complete with the following: - Housing for circuit breaker carriage, 3 no. poles, operation counter, auxiliary contacts of 8 NO + 8 NC, 230V AC single phase motor for spring charging, Closing coil & shunt trip coils rated for 24V DC, closing of breaker- manual by push button/switch., Tripping of breaker- manual by push button/switch and through relay, closure of breaker possible only in test and service positions in the panel, Bus bar chamber including a set of 3 phase 630A copper bus bar. 1 set of 240V AC single phase space heater with switch. 1 set of red and green & amber lamps for ON/OFF/TRIP indication. 1 set of Master Trip relay, 1 set of trip circuit supervision relay. |  |  |  |
|--|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|

## 2. LT PANEL

| item No. | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Make            | Unit | Qty. |
|----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|------|------|
| <b>2</b> | <b>LT PANEL</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                 |      |      |
| 2.1      | Operation & Comprehensive Maintenance Contract of cubical type LT panel suitable for 415V, 3 Phase, 50 Hz AC supply system fabricated in compartmentalized (preferably) design from CRCA sheet steel of 2mm thick for frame work and covers, 3mm thick for gland plates including cleaning & finishing complete with 7 tank process for powder coating in approved shade, having suitable capacity extensible type TPN Aluminium Alloy bus bars of high conductivity, DMC/ SMC bus bar supports, with short circuit withstand capacity of 65KA for 1 Sec.. bottom base channel of MS section not less than 100mm x 50mm x 5mm thick, fabrication shall be done in transportable sections, entire panel shall have a common copper earth bar of size 25mm x 5mm at the rear with 2 Nos. earth stud, solid connections from main bus bar to switch gears with required size of Al. bus bars and control wiring with 2.5sq.mm. zero halogen fire retardant insulated copper conductor S/C cable, cable alleys, cable gland plates in two half, i/c providing following switch gears. | LT Panel- ABB   |      |      |
|          | All ACB shall have Microprocessor based O/C, S/C & E/F release. All MCCB shall have ICS = 100% ICU. All MCCB shall have Microprocessor based release. All CTs and PTs shall be cast resin type. All Breakers (ACBs) shall have LCD Display. All ACB'S shall have spare wired contacts for ON, OFF, Trip, rackin, rack out spring charge status for SCADA, communication along with LCD display and RS485 port for communication. All MCCB outgoing spare wired contacts for ON/OFF and Trip shall be provided for SCADA communication. Protection Relays, TVM/MFM Shall have RS 485 Modbus Communication protocol for SCADA communication. All MCCB shall have adjustable overload, short circuit, earth fault all with adjustable time delays and instantaneous short circuit.                                                                                                                                                                                                                                                                                                   | ACB & MCCB- ABB |      |      |
| 2.1.1    | <b>LT Panel-1 (substation-1)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                 | Each | 1    |
|          | Incoming                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                 |      |      |
|          | 2 Sets of 4000 A, 4P ACBs 65 KA (EDO) microprocessor controlled with overload, short circuit and earth fault protections with adjustable settings along with mechanical and electrical interlocking arrangement with bus coupler.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                 |      |      |
|          | 24 V DC Shunt trip coil. - 2 Sets.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                 |      |      |
|          | 415V AC Under voltage release- 2 Sets.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                 |      |      |
|          | Auto-manual / test selector / switch - 2 Sets.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                 |      |      |
|          | Breaker control switch - 2 Sets.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                 |      |      |
|          | Three Phase Under voltage relay - 2 Sets.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                 |      |      |

|       |                                                                                                                                                                                                                                 |  |      |   |
|-------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|------|---|
|       | Three Phase Over voltage relay - 2 Sets.                                                                                                                                                                                        |  |      |   |
|       | Auxiliary contacts required for necessary interlocking of breakers.                                                                                                                                                             |  |      |   |
|       | 2 Sets of multifunction meter with RS-485 of accuracy class-0.5, with 3 Nos. dual core dual ratio 4000/5/5A 15VA CTs.                                                                                                           |  |      |   |
|       | 2 Sets of IDMT Relay (3 Phase Over Current + Earth Fault) or Equivalent.                                                                                                                                                        |  |      |   |
|       | 2 Sets Breaker ON / OFF / TRIP indicating lights with control MCB's.                                                                                                                                                            |  |      |   |
|       | 2 Sets of R, Y, B phase indicating light (LED type) with 2A, SP MCB, 10KA                                                                                                                                                       |  |      |   |
|       | Bus-Bar: - 5000 A, 415V, TPN, 65KV, 50HZ, Aluminium Bus bar                                                                                                                                                                     |  |      |   |
|       | Outgoing                                                                                                                                                                                                                        |  |      |   |
|       | 2 Sets of 4000 A 4P ACBs 65 KA (EDO) microprocessor controlled with overload, short circuit and earth fault protections with adjustable settings having 4000 /5A CTs, class-1.0 accuracy with digital multifunction meter.      |  |      |   |
|       | 1 Sets of 2000 A 3P ACBs 65 KA (EDO) microprocessor controlled with overload, short circuit and earth fault protections with adjustable settings having 2000 /5A CTs, class-1.0 accuracy with digital ammeter.                  |  |      |   |
|       | 3 Sets of Trip/Neutral/Close Switch.                                                                                                                                                                                            |  |      |   |
|       | 3 Sets of ON/OFF TRIP indication lights (LED type) with control fuse.                                                                                                                                                           |  |      |   |
|       | 3 Sets of push button with 2A, SP MCB, 10 KA                                                                                                                                                                                    |  |      |   |
|       | 3 Sets of R, Y, B Phase indicating lights (LED Type) with 2A, SP MCB, 10KA.                                                                                                                                                     |  |      |   |
|       | Bus Coupler                                                                                                                                                                                                                     |  |      |   |
|       | 1 set of 4000 amps 4 pole electrically operated Electrically draw out type air circuit breaker, with ON/OFF / TRIP indicating lamps with control MCB's, under Voltage, shunt trip, breaker control switch etc.                  |  |      |   |
| 2.1.2 | <b>LT PANEL-2 (Substation-1)</b>                                                                                                                                                                                                |  | Each | 1 |
|       | Incoming                                                                                                                                                                                                                        |  |      |   |
|       | 2 Set of 4000 A 4P ACBs 65 KA (EDO) microprocessor controlled with overload, short circuit and earth fault protections with adjustable settings along with mechanical and electrical interlocking arrangement with bus coupler. |  |      |   |
|       | 24 V DC Shunt trip coil. - 2 Sets                                                                                                                                                                                               |  |      |   |
|       | 415V AC Under voltage release- 2 Sets                                                                                                                                                                                           |  |      |   |
|       | Auto-manual / test selector / switch - 2 Sets                                                                                                                                                                                   |  |      |   |
|       | Breaker control switch - 2 Sets                                                                                                                                                                                                 |  |      |   |
|       | Three Phase Under voltage relay - 2 Sets                                                                                                                                                                                        |  |      |   |
|       | Three Phase Over voltage relay - 2 Sets                                                                                                                                                                                         |  |      |   |
|       | Auxiliary contacts required for necessary interlocking of breakers.                                                                                                                                                             |  |      |   |
|       | 2 Sets of multifunction meter with RS-485 of accuracy class-0.5, with 3 Nos. dual core dual ratio 4000/5A 15VA CTs.                                                                                                             |  |      |   |
|       | 2 Sets of IDMT Relay (3 Phase Over Current + Earth Fault) or Equivalent.                                                                                                                                                        |  |      |   |
|       | 2 Sets Breaker ON/ OFF / TRIP indicating lights with control MCB's.                                                                                                                                                             |  |      |   |
|       | 2 Sets of R, Y, B phase indicating light (LED type) with 2A, SP MCB, 10KA                                                                                                                                                       |  |      |   |
|       | Bus Bar: - 5000A, 415A, TPN, 65KA, 50HZ Aluminium Bus bar                                                                                                                                                                       |  |      |   |
|       | Outgoing                                                                                                                                                                                                                        |  |      |   |
|       | 3 Sets of 3200 A 4P ACBs 65 KA (EDO) microprocessor controlled with overload, short circuit and earth fault protections with adjustable settings having 3200/5A CT's, class-1.0 accuracy with digital multifunction meter.      |  |      |   |

|       |                                                                                                                                                                                                                                       |  |      |   |
|-------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|------|---|
|       | 3 Sets of Trip/ Neutral/Close Switch.                                                                                                                                                                                                 |  |      |   |
|       | 3 Sets of ON/OFF/TRIP indication lights (LED type) with control fuse.                                                                                                                                                                 |  |      |   |
|       | 3 Sets of push button with 2A, SP MCB, 10 KA                                                                                                                                                                                          |  |      |   |
|       | 3 Sets of R, Y, B Phase indicating lights (LED Type) with 2A, SP MCB, 10KA.                                                                                                                                                           |  |      |   |
|       | Bus Coupler                                                                                                                                                                                                                           |  |      |   |
|       | 1 set of 4000 amps 4 pole electrically operated Electrically draw out type air circuit breaker, with ON / OFF / TRIP indicating lamps with control MCB's, under Voltage, shunt trip, breaker control switch etc.                      |  |      |   |
| 2.1.3 | <b>LT PANEL-3 (Substation-1)</b>                                                                                                                                                                                                      |  | Each | 1 |
|       | Incoming                                                                                                                                                                                                                              |  |      |   |
|       | 2 Sets of 4000A 4P ACBs 65 KA (EDO) microprocessor controlled with overload, short circuit and earth fault protections with adjustable settings along with mechanical and electrical interlocking arrangement with bus coupler having |  |      |   |
|       | 24 V DC Shunt trip coil. - 2 Sets.                                                                                                                                                                                                    |  |      |   |
|       | 415V AC Under voltage release-2 Sets.                                                                                                                                                                                                 |  |      |   |
|       | Auto-manual / test selector / switch - 2 Sets.                                                                                                                                                                                        |  |      |   |
|       | Breaker control switch - 2 Sets.                                                                                                                                                                                                      |  |      |   |
|       | Three Phase Under voltage relay - 2 Sets                                                                                                                                                                                              |  |      |   |
|       | Three Phase Over voltage relay - 2 Sets                                                                                                                                                                                               |  |      |   |
|       | Auxiliary contacts required for necessary interlocking of breakers.                                                                                                                                                                   |  |      |   |
|       | 2 Sets of multifunction meter with RS-485 of accuracy class-0.5, with 3 Nos. dual core dual ratio 4000/5/5A 15VA CTs.                                                                                                                 |  |      |   |
|       | 2 set of IDMT Relay. (3 phase over current + Earth Fault) or equivalent.                                                                                                                                                              |  |      |   |
|       | 2 Sets Breaker ON / OFF / TRIP indicating lights with control MCB's.                                                                                                                                                                  |  |      |   |
|       | 2 Sets of R, Y, B phase indicating light (LED type) with 2A, SP MCB, 10KA                                                                                                                                                             |  |      |   |
|       | Bus Bar: - 5000A, 415A, TPN, 65KA, 50HZ Aluminium Bus bar                                                                                                                                                                             |  |      |   |
|       | Outgoing                                                                                                                                                                                                                              |  |      |   |
|       | 2 Sets of 4000A 4P ACBs 65 KA (EDO) microprocessor controlled with overload, short circuit and earth fault protections with adjustable settings having 4000 / 5A CTs, class-1.0 accuracy with digital multifunction meter.            |  |      |   |
|       | 1 Sets of 2000 A 3P ACBs 65 KA (EDO) microprocessor controlled with overload, short circuit and earth fault protections with adjustable settings having 4000 /5A CTs, class-1.0 accuracy with digital multifunction meter.            |  |      |   |
|       | 3 sets of Trip / Neutral / Close switch.                                                                                                                                                                                              |  |      |   |
|       | 3 sets of ON / OFF / TRIP indicating lights (LED Type) with control fuse.                                                                                                                                                             |  |      |   |
|       | 3 sets of push button with 2A, SP MCB, 10 KA.                                                                                                                                                                                         |  |      |   |
|       | 3 Sets of R, Y, B Phase indicating lights (LED Type) with 2A, SP MCB, 10KA.                                                                                                                                                           |  |      |   |
|       | Bus Coupler                                                                                                                                                                                                                           |  |      |   |
|       | 1 sets of 4000 amps 4 pole electrically operated electrically draw out type air circuit breaker, with ON / OFF / TRIP indicating lamps with control MCB's, under voltage, shunt trip, breaker control switch etc.                     |  |      |   |
| 2.1.4 | <b>LT PANEL-4 (SUBSTATION-1)</b>                                                                                                                                                                                                      |  | Each | 1 |
|       | Incoming                                                                                                                                                                                                                              |  |      |   |
|       | 3 Sets of 4000 A 4P ACBs 65 KA (EDO) microprocessor controlled with overload, short circuit and earth fault protections with adjustable                                                                                               |  |      |   |

|       |                                                                                                                                                                                                                                                                                                                                         |  |      |   |
|-------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|------|---|
|       | settings along with electrical interlocking of all incoming circuit breakers and bus couplers through programmable logic controller (PLC) to avoid parallel operation. The PLC shall be comprising of 8 input and 6 output of digital input signal and output relay with 230V AC/ 24V DC switch mode power supply with backup from UPS. |  |      |   |
|       | 24V DC shunt trip coil- 3.                                                                                                                                                                                                                                                                                                              |  |      |   |
|       | 415V AC Under voltage release- 3 sets.                                                                                                                                                                                                                                                                                                  |  |      |   |
|       | Auto-manual / test selector / switch -3 sets.                                                                                                                                                                                                                                                                                           |  |      |   |
|       | Breaker control switch -3 sets.                                                                                                                                                                                                                                                                                                         |  |      |   |
|       | Three phases under voltage relay -3 sets.                                                                                                                                                                                                                                                                                               |  |      |   |
|       | Three phase over voltage relay -3 sets.                                                                                                                                                                                                                                                                                                 |  |      |   |
|       | Auxiliary contacts required for necessary interlocking of breakers.                                                                                                                                                                                                                                                                     |  |      |   |
|       | 3 Sets of multifunction meter with RS-485 of accuracy class-0.5, with 3 Nos. dual core dual ratio 4000/5A 15VA CTs.                                                                                                                                                                                                                     |  |      |   |
|       | 3 Sets of IDMT Relay. (3 Phase Over Current + Earth Fault) or Equivalent.                                                                                                                                                                                                                                                               |  |      |   |
|       | 3 Sets Breaker ON/OFF / TRIP indicating lights with control MCB's.                                                                                                                                                                                                                                                                      |  |      |   |
|       | 3 sets of R, Y, B Phase indicating lights (LED Type) with 2A, SP MCB, 10KA.                                                                                                                                                                                                                                                             |  |      |   |
|       | Bus Bar: - 5000A, 415A, TPN, 65KA, 50HZ Aluminium Bus bar                                                                                                                                                                                                                                                                               |  |      |   |
|       | Outgoing                                                                                                                                                                                                                                                                                                                                |  |      |   |
|       | 6 sets of 4000P 4P ACBs 65 KA (EDO) microprocessor controlled with overload, short circuit and earth fault protections with adjustable settings having 4000/5A CTs, class-1.0 accuracy with digital multifunction meter.                                                                                                                |  |      |   |
|       | 6 Sets of Trip/Neutral/Close Switch.                                                                                                                                                                                                                                                                                                    |  |      |   |
|       | 6 Sets of ON/OFF/TRIP indication lights (LED type) with control fuse.                                                                                                                                                                                                                                                                   |  |      |   |
|       | 6 Sets of push button with 2A, SP MCB, 10 KA                                                                                                                                                                                                                                                                                            |  |      |   |
|       | 6 Sets of R, Y, B Phase indicating lights (LED Type) with 2A, SP MCB, 10KA.                                                                                                                                                                                                                                                             |  |      |   |
|       | Bus Coupler                                                                                                                                                                                                                                                                                                                             |  |      |   |
|       | 2 sets of 4000 amps 4 pole electrically operated Electrically draw out type air circuit breaker, with ON/OFF /TRIP indicating lamps with control MCB's, under Voltage, shunt trip. breaker control switch etc.                                                                                                                          |  |      |   |
| 2.1.5 | <b>LT-PANEL-5 (SUBSTATION-1)</b>                                                                                                                                                                                                                                                                                                        |  | Each | 1 |
|       | Incoming                                                                                                                                                                                                                                                                                                                                |  |      |   |
|       | 2 Sets of 4000 A 4P ACBs 65 KA (EDO) microprocessor controlled with overload, short circuit, and earth fault protections with adjustable settings along with mechanical and electrical interlocking arrangement with bus coupler.                                                                                                       |  |      |   |
|       | 24 V DC Shunt trip coil. - 2 Sets.                                                                                                                                                                                                                                                                                                      |  |      |   |
|       | 415V AC Under voltage release- 2 Sets.                                                                                                                                                                                                                                                                                                  |  |      |   |
|       | Auto-manual / test selector / switch - 2 Sets.                                                                                                                                                                                                                                                                                          |  |      |   |
|       | Breaker control switch - 2 Sets.                                                                                                                                                                                                                                                                                                        |  |      |   |
|       | Three Phase Under voltage relay - 2 Sets.                                                                                                                                                                                                                                                                                               |  |      |   |
|       | Three Phase over voltage relay - 2 Sets.                                                                                                                                                                                                                                                                                                |  |      |   |
|       | Auxiliary contacts required for necessary interlocking of breakers.                                                                                                                                                                                                                                                                     |  |      |   |
|       | 2 Sets of multifunction meter with RS-485 of accuracy class-0.5. with 3 Nos. 4000/5A 15VA CTs.                                                                                                                                                                                                                                          |  |      |   |
|       | 2 Sets of IDMT Relay. (3 Phase Over Current + Earth Fault) or Equivalent.                                                                                                                                                                                                                                                               |  |      |   |
|       | 2 Sets Breaker ON / OFF / TRIP indicating lights with control MCB's.                                                                                                                                                                                                                                                                    |  |      |   |

|       |                                                                                                                                                                                                                               |  |      |   |
|-------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|------|---|
|       | 2 Sets of R, Y, B phase indicating light (LED type) with 2A, SP MCB, 10KA                                                                                                                                                     |  |      |   |
|       | Bus Bar                                                                                                                                                                                                                       |  |      |   |
|       | 5000A, 415A, TPN, 65KA, 50HZ Aluminium Bus bar.                                                                                                                                                                               |  |      |   |
|       | Outgoing                                                                                                                                                                                                                      |  |      |   |
|       | 3 Sets of 1250A 4P ACBs 65 KA (EDO) microprocessor controlled with overload. short circuit and earth fault protections with adjustable settings having 1250/5A CTs, class-1.0 accuracy with digital multifunction meter.      |  |      |   |
|       | 2 Sets of 1000A 4P ACBs 65 KA (EDO) microprocessor controlled with overload, short circuit and earth fault protections with adjustable settings having 1000/5A CTS, class-1.0 accuracy with digital multifunction meter.      |  |      |   |
|       | 10 Sets of 800A 4P ACBs 65 KA (EDO) microprocessor controlled with overload, short circuit and earth fault protections with adjustable settings having 800/5A CTs, class-1.0 accuracy with digital multifunction meter.       |  |      |   |
|       | 13 Sets of 630A 4P MCCB 65 KA (EDO) microprocessor controlled with overload, short circuit and earth fault protections with adjustable settings having 630/5A CTs, class-1.0 accuracy with digital multifunction meter.       |  |      |   |
|       | 7 Sets of 400A 4P MCCB 65 KA microprocessor controlled with overload, short circuit and earth fault protections with adjustable settings having 400/5A CTs, class 1.0 accuracy with digital multifunction meter.              |  |      |   |
|       | 16 Sets of 250A 4P MCCB 65 KA microprocessor controlled with overload, short circuit and earth fault protections with adjustable settings having 250/5A CTs, class 1.0 accuracy with digital multifunction mete.              |  |      |   |
|       | 5 Sets of Trip/Neutral/Close Switch.                                                                                                                                                                                          |  |      |   |
|       | 15 Sets of ON/OFF/TRIP indication lights (LED type) with control fuse.                                                                                                                                                        |  |      |   |
|       | 15 Sets of push button with 2A, SP MCB, 10 KA.                                                                                                                                                                                |  |      |   |
|       | 54 Sets of R, Y, B Phase indicating lights (LED Type) with 2A, SP MCB, 10KA.                                                                                                                                                  |  |      |   |
|       | Bus Coupler                                                                                                                                                                                                                   |  |      |   |
|       | 1 Set of 4000 amps 4 pole electrically operated Electrically draw out type air circuit breaker, with ON/OFF / TRIP indicating lamps with control MCB's, under Voltage, shunt trip, breaker control switch etc.                |  |      |   |
| 2.1.6 | <b>LT-PANEL-6 (SUBSTATION-1)</b>                                                                                                                                                                                              |  | Each | 1 |
|       | Incoming                                                                                                                                                                                                                      |  |      |   |
|       | 2 Sets of 3200 A 4P ACBs 50 KA (EDO) microprocessor controlled with overload short circuit and earth fault protections with adjustable settings along with mechanic and electrical interlocking arrangement with bus coupler. |  |      |   |
|       | 24 V DC Shunt trip coil. - 2 Sets.                                                                                                                                                                                            |  |      |   |
|       | 415V AC Under voltage release- 2 Sets.                                                                                                                                                                                        |  |      |   |
|       | Auto-manual /test selector / switch - 2 Sets.                                                                                                                                                                                 |  |      |   |
|       | Breaker control switch - 2 Sets.                                                                                                                                                                                              |  |      |   |
|       | Three Phase Under voltage relay - 2 Sets.                                                                                                                                                                                     |  |      |   |
|       | Three Phase Over voltage relay - 2 Sets.                                                                                                                                                                                      |  |      |   |
|       | Auxiliary contacts required for necessary interlocking of breakers.                                                                                                                                                           |  |      |   |
|       | 2 sets of multifunction meter with RS-485 of accuracy class-0.5, with 6 Nos, dual core dual ratio 3200/5/5A 15VA CTs.                                                                                                         |  |      |   |
|       | 2 Set of IDMT Relay.(3 Phase Over Current + Earth Fault) or Equivalent.                                                                                                                                                       |  |      |   |
|       | 2 Set Breaker ON/OFF / TRIP indicating lights with control MCB's.                                                                                                                                                             |  |      |   |

|       |                                                                                                                                                                                                                                                                                                                                 |  |      |   |
|-------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|------|---|
|       | 2 Set of R, Y, B phase indicating light (LED type) with 2A, SP MCB, 10KA                                                                                                                                                                                                                                                        |  |      |   |
|       | Bus Bar:- 4000A, 415V, TPN, 65KA, 50HZ Aluminium Bus Bar.                                                                                                                                                                                                                                                                       |  |      |   |
|       | Outgoing                                                                                                                                                                                                                                                                                                                        |  |      |   |
|       | 4 Sets of 1250A 3P ACBs 65 KA (EDO) microprocessor controlled with overload short circuit and earth fault protections with adjustable settings having 250 /5A CTS class-1.0 accuracy with ammeter and ammeter selector switch.                                                                                                  |  |      |   |
|       | 9 Sets of 630A 4P MCCB 65 KA microprocessor controlled with overload, short circuit, and earth fault protections with adjustable settings having 630/5A CTs, class 1.0 accuracy with digital multifunction meter.                                                                                                               |  |      |   |
|       | 5 Sets of 400A 4P MCCB 65 KA microprocessor controlled with overload, short circuit, and earth fault protections with adjustable settings having 400/5A CTs, class 1.0 accuracy with digital multifunction meter.                                                                                                               |  |      |   |
|       | 9 Set of 320A 4P MCCB 65 KA microprocessor controlled with overload. short circuit and earth fault protections with adjustable settings having 320/5A CTs, class 1.0 accuracy with digital multifunction meter.                                                                                                                 |  |      |   |
|       | 15 Sets of 250A 4P MCCB 65 KA microprocessor controlled with overload, short circuit, and earth fault protections with adjustable settings having 250/5A CTs, class 1.0 accuracy with digital multifunction meter.                                                                                                              |  |      |   |
|       | 4 Sets of Trip/Neutral/Close Switch.                                                                                                                                                                                                                                                                                            |  |      |   |
|       | 4 Sets of ON/OFF/TRIP indication lights (LED type) with control fuse.                                                                                                                                                                                                                                                           |  |      |   |
|       | 4 Sets of push button with 2A, SP MCB, 10KA                                                                                                                                                                                                                                                                                     |  |      |   |
|       | 41 Sets of R, Y, B Phase indicating lights (LED Type) with 2A, SP MCB, 10kA.                                                                                                                                                                                                                                                    |  |      |   |
|       | Bus Coupler                                                                                                                                                                                                                                                                                                                     |  |      |   |
|       | 1 Set of 3200 amps 4 pole electrically operated Electrically draw out type air circuit breaker, with ON/OFF / TRIP indicating lamps with control MCB, under Voltage, shunt trip, breaker control switch etc.                                                                                                                    |  |      |   |
| 2.1.7 | <b>LT PANEL- 7 (SUBSTATION-1)</b>                                                                                                                                                                                                                                                                                               |  | Each | 1 |
|       | Incoming                                                                                                                                                                                                                                                                                                                        |  |      |   |
|       | 1 Set of 4000 A 4P ACBs 65 KA (EDO) microprocessor controlled with overload, short circuit, and earth fault protections with adjustable settings.                                                                                                                                                                               |  |      |   |
|       | 2 Set of 3200 A 4P ACBs 65 KA (EDO) microprocessor controlled with overload. short circuit and earth fault protections with adjustable settings.                                                                                                                                                                                |  |      |   |
|       | 1 Set of 1600 A 4P ACBs 65 KA (EDO) microprocessor controlled with overload, short circuit and earth fault protections with adjustable settings.                                                                                                                                                                                |  |      |   |
|       | Electrical Interlocking                                                                                                                                                                                                                                                                                                         |  |      |   |
|       | Along with electrical interlocking of all incoming circuit breakers and bus couplers through programmable logic controller (PLC) to avoid parallel operation. The PLC shall be comprising of 12 input and 8 output of digital input signal and output relay with 230V AC /24V DC switch mode power supply with backup from UPS. |  |      |   |
|       | 24V DC shunt trip coil- 4 sets.                                                                                                                                                                                                                                                                                                 |  |      |   |
|       | 415V AC Under voltage release-4 sets.                                                                                                                                                                                                                                                                                           |  |      |   |
|       | Auto-manual / test selector / switch - 4 Sets                                                                                                                                                                                                                                                                                   |  |      |   |
|       | Breaker control switch - 4 Sets                                                                                                                                                                                                                                                                                                 |  |      |   |
|       | Three Phase Under voltage relay - 4 Sets                                                                                                                                                                                                                                                                                        |  |      |   |
|       | Three Phase Over voltage relay - 4 Sets                                                                                                                                                                                                                                                                                         |  |      |   |
|       | Auxiliary contacts required for the necessary interlocking of breakers.                                                                                                                                                                                                                                                         |  |      |   |

|       |                                                                                                                                                                                                                                  |  |      |   |
|-------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|------|---|
|       | 2 sets of multifunction meter with RS-485 of accuracy class-0.5. with 6 Nos. dual core dual ratio 4000/5/5A 15VA CTs.                                                                                                            |  |      |   |
|       | 1 sets of multifunction meter with RS-485 of accuracy class-0.5, with 3 Nos. 3200/5A 15VA CTs.                                                                                                                                   |  |      |   |
|       | 1 sets of multifunction meter with RS-485 of accuracy class-0.5. with 3 Nos. 1600/5A 15VA CTs                                                                                                                                    |  |      |   |
|       | 4 Set of IDMT Relay (3 Phase Over Current + Earth Fault) or Equivalent.                                                                                                                                                          |  |      |   |
|       | 4 Set Breaker ON/OFF / TRIP indicating lights with control MCB's.                                                                                                                                                                |  |      |   |
|       | 4 Set of R, Y, B phase indicating light (LED type) with 2A, SP MCB, 10KA.                                                                                                                                                        |  |      |   |
|       | Bus Bar                                                                                                                                                                                                                          |  |      |   |
|       | 5000 A, 415V, TPN, 65 KA, 50HZ Aluminium Bus bar.                                                                                                                                                                                |  |      |   |
|       | Outgoing                                                                                                                                                                                                                         |  |      |   |
|       | 1 Set of 2500A 4P ACBs 65 KA (EDO) microprocessor controlled with overload, short circuit and earth fault protections with adjustable settings having 2500/5A CTs, class-1.0 accuracy with digital multifunction meter.          |  |      |   |
|       | 2 Sets of 2000A 4P ACBs 65 KA (EDO) microprocessor controlled with overload, short circuit and earth fault protections with adjustable settings having 2000/5A CTs, class-1.0 accuracy with digital multifunction meter.         |  |      |   |
|       | 5 Sets of 1600A 3P ACBs 65 KA (EDO) microprocessor controlled with overload, short circuit and earth fault protections with adjustable settings having 1600/5A CTs, class-1.0 accuracy with ammeter and ammeter selector switch. |  |      |   |
|       | 4 Sets of 400A 4P MCCB 65 KA microprocessors controlled with overload. short circuit and earth fault protections with adjustable settings having 400/5A CTs, class 1.0 accuracy with digital multifunction meter.                |  |      |   |
|       | 2 Sets of 320A 4P MCCB 65 KA microprocessor controlled with overload. short circuit and earth fault protections with adjustable settings having 320/5A CTs, class 1.0 accuracy with digital multifunction meter.                 |  |      |   |
|       | 8 Sets of Trip/Neutral/Close Switch.                                                                                                                                                                                             |  |      |   |
|       | 8 Sets of ON/OFF/TRIP indication lights (LED type) with control fuse.                                                                                                                                                            |  |      |   |
|       | 8 Sets of push button with 2A, SP MCB, 10 KA.                                                                                                                                                                                    |  |      |   |
|       | 14 Sets of R, Y, B Phase indicating lights (LED Type) with 2A, SP MCB, 10KA.                                                                                                                                                     |  |      |   |
|       | Bus Coupler                                                                                                                                                                                                                      |  |      |   |
|       | 1 Set of 4000 amps 4 pole electrically operated Electrically draw out type air circuit breaker, with ON/OFF / TRIP indicating lamps with control MCB's, under Voltage, shunt trip, breaker control switch etc.                   |  |      |   |
|       | 1 Set of 3200 amps 4 pole electrically operated Electrically draw out type air circuit breaker, with ON/OFF / TRIP indicating lamps with control MCB's, under Voltage, shunt trip, breaker control switch etc.                   |  |      |   |
|       | 1 sets of 1600 amps 4 pole electrically operated Electrically draw out type air circuit breaker, with ON / OFF / TRIP indicating lamps with control MCB's under Voltage, shunt trip, breaker control switch etc.                 |  |      |   |
| 2.1.8 | <b>LT PANEL-1 (substation-2)</b>                                                                                                                                                                                                 |  | Each | 1 |
|       | Incoming                                                                                                                                                                                                                         |  |      |   |
|       | 2 Sets of 4000 A ACBs 65 Kv (EDO) microprocessor controlled with overload, short circuit and earth fault protections with adjustable settings along with mechanical and electrical interlocking arrangement with bus coupler.    |  |      |   |
|       | 24 V DC Shunt trip coil - 2 Sets.                                                                                                                                                                                                |  |      |   |

|       |                                                                                                                                                                                                                                    |  |      |   |
|-------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|------|---|
|       | 415V AC Under voltage release- 2 Sets.                                                                                                                                                                                             |  |      |   |
|       | Auto-manual / test selector / switch - 2 Sets.                                                                                                                                                                                     |  |      |   |
|       | Breaker control switch - 2 Sets.                                                                                                                                                                                                   |  |      |   |
|       | Three Phase Under voltage relay - 2 Sets.                                                                                                                                                                                          |  |      |   |
|       | Three Phase Over voltage relay - 2 Sets.                                                                                                                                                                                           |  |      |   |
|       | Auxiliary contacts required for necessary interlocking of breakers.                                                                                                                                                                |  |      |   |
|       | 2 sets of multifunction meter with RS-485 of accuracy class-0.5, with 6 Nos. dual core dual ratio 4000/5/5A 15VA CTs.                                                                                                              |  |      |   |
|       | 2 Set of IDMT Relay (3 Phase Over Current + Earth Fault) or Equivalent.                                                                                                                                                            |  |      |   |
|       | 2 Set Breaker ON/OFF / TRIP indicating lights with control MCB's.                                                                                                                                                                  |  |      |   |
|       | 2 Set of R, Y, B phase indicating light (LED type) with 2A, SP MCB, 10KA.                                                                                                                                                          |  |      |   |
|       | Bus Bar: - 5000A, 415V, TPN, 65KA, 50HZ Aluminium Bus Bar.                                                                                                                                                                         |  |      |   |
|       | Outgoing                                                                                                                                                                                                                           |  |      |   |
|       | 5 Sets of 4000 A 4P ACBs 65 KA (EDO) microprocessor controlled with overload short circuit and earth fault protections with adjustable settings having 4000 /5A CTs class-1.0 accuracy with digital multifunction meter.           |  |      |   |
|       | 3 Sets of 1250 A TP ACBs 65 KA (EDO) microprocessor controlled with overload, short circuit and earth fault protections with adjustable settings having 1250 /5A CTs. class-1.0 accuracy with ammeter and ammeter selector switch. |  |      |   |
|       | 4 Sets of 630 A 4P MCCB 65 KA microprocessor controlled with overload, short circuit and earth fault protections with adjustable settings having 630/5A CTs, class- 1.0 accuracy with digital multifunction meter.                 |  |      |   |
|       | 4 Set of 250 A 4P MCCB 65 KA microprocessor controlled with overload, short circuit and earth fault protections with adjustable settings having 250/5A CTs, class 1.0 accuracy with digital multifunction meter.                   |  |      |   |
|       | 8 Sets of Trip/Neutral/Close Switch.                                                                                                                                                                                               |  |      |   |
|       | 8 Sets of ON/OFF/TRIP indication lights (LED type) with control fuse.                                                                                                                                                              |  |      |   |
|       | 8 Sets of push button with 2A, SP MCB, 10 KA.                                                                                                                                                                                      |  |      |   |
|       | 16 Sets of R, Y, B Phase indicating lights (LED Type) with 2A, SP MCB, 10KA.                                                                                                                                                       |  |      |   |
|       | Bus Coupler                                                                                                                                                                                                                        |  |      |   |
|       | 1 Sets of 4000 amps 4 pole electrically operated Electrically draw out type air circuit breaker, with ON/OFF / TRIP indicating lamps with control MCB's, under Voltage, shunt trip. breaker control switch etc.                    |  |      |   |
| 2.1.9 | <b>LT PANEL-2 (Substation-2)</b>                                                                                                                                                                                                   |  | Each | 1 |
|       | Incoming                                                                                                                                                                                                                           |  |      |   |
|       | 1 Set of 4000 A 4P ACBs 65 KA (EDO) microprocessor controlled with overload, short circuit and earth fault protections with adjustable settings.                                                                                   |  |      |   |
|       | 24 V DC Shunt trip coil. - 1 Set.                                                                                                                                                                                                  |  |      |   |
|       | 415V AC Under voltage release- 1 Set.                                                                                                                                                                                              |  |      |   |
|       | Auto-manual / test selector / switch - 1 Set.                                                                                                                                                                                      |  |      |   |
|       | Breaker control switch - 1 Set.                                                                                                                                                                                                    |  |      |   |
|       | Three Phase Under voltage relay - 1 Set.                                                                                                                                                                                           |  |      |   |
|       | Three Phase Over voltage relay - 1 Set                                                                                                                                                                                             |  |      |   |
|       | Auxiliary contacts required for necessary interlocking of breakers.                                                                                                                                                                |  |      |   |
|       | 1 Set of multifunction meter with RS-485 of accuracy class-0.5, with 3 Nos. 4000/5A 15VA CTs.                                                                                                                                      |  |      |   |

|     |                                                                                                                                                                                                                                                                          |              |      |   |
|-----|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|------|---|
|     | 1 Set of IDMT Relay (3 Phase Over Current + Earth Fault) or Equivalent.                                                                                                                                                                                                  |              |      |   |
|     | 1 Set Breaker ON/OFF / TRIP indicating lights with control MCB's.                                                                                                                                                                                                        |              |      |   |
|     | 1 Set of R, Y, B phase indicating light (LED type) with 2A, SP MCB, 10KA.                                                                                                                                                                                                |              |      |   |
|     | Bus Bar                                                                                                                                                                                                                                                                  |              |      |   |
|     | 5000A, 415V, TPN, 65KA, 50HZ Aluminium Bus Bar.                                                                                                                                                                                                                          |              |      |   |
|     | Outgoing                                                                                                                                                                                                                                                                 |              |      |   |
|     | 3 Sets of 1600A 4P ACBs 65 KA (EDO) microprocessor controlled with overload, short circuit and earth fault protections with adjustable settings having 1600 /5A CTS, class-1.0 accuracy with digital multifunction meter.                                                |              |      |   |
|     | 4 Sets of 800A 4P ACBs 65 KA (EDO) microprocessor controlled with overload, short circuit and earth fault protections with adjustable settings having 800 /5A CTs, class-1.0 accuracy with digital multifunction meter.                                                  |              |      |   |
|     | 3 Sets of 630A 4P MCCB 65 KA (EDO) microprocessor controlled with overload, short circuit and earth fault protections with adjustable settings having 630 /5A CTs, class-1.0 accuracy with digital multifunction meter.                                                  |              |      |   |
|     | 3 Sets of 400A 4P MCCB 65 KA microprocessor controlled with overload, short circuit and earth fault protections with adjustable settings having 400/5A CTs, class 1.0 accuracy with digital multifunction meter.                                                         |              |      |   |
|     | 1 Set of 320A 4P MCCB 65 KA microprocessor controlled with overload, short circuit and earth fault protections with adjustable settings having 320/5A CTs, class 1.0 accuracy with digital multifunction meter.                                                          |              |      |   |
|     | 18 Set of 250A 4P MCCB 65 KA microprocessor controlled with overload, short circuit and earth fault protections with adjustable settings having 250/5A CTs, class 1.0 accuracy with digital multifunction meter.                                                         |              |      |   |
|     | 7 Sets of Trip/Neutral/Close Switch.                                                                                                                                                                                                                                     |              |      |   |
|     | 7 Sets of ON/OFF/TRIP indication lights (LED type) with control fuse.                                                                                                                                                                                                    |              |      |   |
|     | 7 Sets of push button with 2A, SP MCB, 10 KA.                                                                                                                                                                                                                            |              |      |   |
|     | 32 Sets of R, Y, B Phase indicating lights (LED Type) with 2A, SP MCB, 10KA.                                                                                                                                                                                             |              |      |   |
| 2.2 | <b>ATS PANELS</b>                                                                                                                                                                                                                                                        |              |      |   |
|     | ATS PANEL-1 & 2 (Substation-1) & ATS PANEL-1 (Substation-2)                                                                                                                                                                                                              |              |      |   |
|     | Operation & Comprehensive Maintenance Contract of following capacity ATS along with ACB as detailed below in the existing control panel, including connections, interconnections as required.                                                                            |              |      |   |
|     | 1 Set of 4000A 4P ATS with Bypass-isolation Switch with over lapping Neutral, for 415V, 50HZ supply. With In-Phase Monitor, Indicating Lamps & Gr.5 Micro Processor controller with 2 nos 4000A 4P ACB 65 KA (EDO Type) with O/L, S/C and E/F microprocessor controlled. | ASCO-EMERSON | SETS | 3 |
|     | two sets of 4000/5A CTs, class-0.5 accuracy with multifunction meter.                                                                                                                                                                                                    |              |      |   |
|     | 2 Sets of R, Y, B phase indicating light (LED type) with 2A SP MCB                                                                                                                                                                                                       |              |      |   |
|     | 2 Sets Breaker ON/OFF/TRIP indicating lights with control MCB's                                                                                                                                                                                                          |              |      |   |
|     | 2 Sets of push button with 2A, SP MCB, 10KA.                                                                                                                                                                                                                             |              |      |   |
|     |                                                                                                                                                                                                                                                                          |              |      |   |
|     |                                                                                                                                                                                                                                                                          |              |      |   |
| 2.3 | <b>AC PANELS</b>                                                                                                                                                                                                                                                         |              |      |   |

|       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |  |      |   |
|-------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|------|---|
|       | Operation & Comprehensive Maintenance Contract of cubical type LT panel suitable for 415V, 3 Phase, 4 Wire 50 Hz AC supply system fabricated in compartmentalized (preferably) design from CRCA sheet steel of 2mm thick for frame work and covers, 3mm thick for gland plates i/c cleaning & finishing complete with 7 tank process for powder coating in approved shade, having suitable capacity extensible type TPN Aluminium Alloy bus bars of high conductivity, DMC/ SMC bus bar supports, with short circuit withstand capacity of 50KA for 1 Sec. bottom base channel of MS section not less than 100mm x 50mm x 5mm thick, fabrication shall be done in transportable sections, entire panel shall have a common copper earth bar of size 25mm x 5mm at the rear with 2 Nos. earth stud, solid connections from main bus bar to switch gears with required size of Al. bus bars and control wiring with 2.5sq.mm. zero halogen fire retardant insulated copper conductor S/C cable, cable alleys, cable gland plates in two half, i/c providing following switch gears. |  |      |   |
|       | All ACB shall have Microprocessor based O/C, S/C & E/F release                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  |      |   |
|       | All MCCB shall have ICS = 100% ICU                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |  |      |   |
|       | All MCCB shall have Microprocessor based release                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |      |   |
|       | All CTs and PTs shall be cast resin type.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |  |      |   |
|       | All Breakers ACBs shall have LCD Display                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |  |      |   |
|       | All ACB'S shall have spare wired contacts for ON, OFF, Trip, rackin, rack out spring charge status for SCADA communication along with LCD display.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |  |      |   |
|       | All MCCB outgoings spare wired contacts for ON/OFF and Trip shall be provided for SCADA communication.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |      |   |
|       | Protection Relays, TVM/MFM Shall have RS 485 Modbus Communication protocol for SCADA communication.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |      |   |
|       | All MCCB shall have adjustable overload, short circuit, earth fault all with adjustable time delays and instantaneous short circuit.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |      |   |
| 2.3.1 | <b>LTACMH-1 (Main Hospital)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |  | Each | 1 |
|       | Incoming                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |  |      |   |
|       | 1 Set of 400A 4P MCCB 50 KA microprocessor controlled with overload, short circuit and earth fault protections with adjustable settings having 400/5A CTs, class 0.5 accuracy with digital multifunction meter.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |  |      |   |
|       | 1 Set of R, Y, B phase indicating light (LED type) with 2A, SP MCB, 10KA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |  |      |   |
|       | Bus Bar: 600 A, 415V, 4 wire, 50KA, 50HZ Aluminium Bus Bar                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |  |      |   |
|       | Outgoing                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |  |      |   |
|       | 10 Sets of 250A 4P MCCB 50 KA microprocessor controlled with overload, short circuit and earth fault protections with adjustable settings having 250/5A CTs, class 1.0 accuracy with digital multifunction meter.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |  |      |   |
|       | 10 Sets of R, Y, B Phase indicating lights (LED Type) with 2A, SP MCB, 10KA.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  |      |   |
| 2.3.2 | <b>LTACMH-2 (Main Hospital)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |  | Each | 1 |
|       | Incoming                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |  |      |   |
|       | 1 Set of 400A 4P MCCB 50 KA microprocessor controlled with overload, short circuit and earth fault protections with adjustable settings having 400/5A CTs, class 0.5 accuracy with digital multifunction meter.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |  |      |   |
|       | 1 Set of R, Y, B phase indicating light (LED type) with 2A, SP MCB, 10KA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |  |      |   |
|       | Bus Bar: 600 A, 415V, 4 Wire, 50 KA, 50 Hz Aluminium Bus bar                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  |      |   |
|       | Outgoing                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |  |      |   |

|       |                                                                                                                                                                                                                   |  |      |   |
|-------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|------|---|
|       | 9 Sets of 250A 4P MCCB 50 KA microprocessor controlled with overload, short circuit and earth fault protections with adjustable settings having 250/5A CTs, class 1.0 accuracy with digital multifunction meter,  |  |      |   |
|       | 9 Sets of R, Y, B Phase indicating lights (LED Type) with 2A, SP MCB, 10KA.                                                                                                                                       |  |      |   |
| 2.3.3 | <b>LTACMH-3 (Main Hospital)</b>                                                                                                                                                                                   |  | Each | 1 |
|       | Incoming                                                                                                                                                                                                          |  |      |   |
|       | 1 Set of 400A 4P MCCB 50 KA microprocessor controlled with overload, short circuit and earth fault protections with adjustable settings having 400/5A CTs, class 0.5 accuracy with digital multifunction meter.   |  |      |   |
|       | 1 Set of R, Y, B phase indicating light (LED type) with 2A, SP MCB, 10KA                                                                                                                                          |  |      |   |
|       | Bus Bar: 600 A, 415V, 4 Wire, 50 KA, 50 Hz Aluminium Bus bar                                                                                                                                                      |  |      |   |
|       | Outgoing                                                                                                                                                                                                          |  |      |   |
|       | 7 Sets of 250A 4P MCCB 50 KA microprocessor controlled with overload, short circuit and earth fault protections with adjustable settings having 250/5A CTs, class 1.0 accuracy with digital multifunction meter.  |  |      |   |
|       | 7 Sets of R, Y, B Phase indicating lights (LED Type) with 2A, SP MCB, 10KA.                                                                                                                                       |  |      |   |
| 2.3.4 | <b>LTACMH-4 (Main Hospital)</b>                                                                                                                                                                                   |  | Each | 1 |
|       | Incoming                                                                                                                                                                                                          |  |      |   |
|       | 1 Set of 630A 4P MCCB 50 KA microprocessor controlled with overload, short circuit and earth fault protections with adjustable settings having 630/5A CTs, class 0.5 accuracy with digital multifunction meter.   |  |      |   |
|       | 1 Set of R, Y, B phase indicating light (LED type) with 2A, SP MCB, 10KA                                                                                                                                          |  |      |   |
|       | Bus Bar: 1000 A, 415V, 4 Wire, 50 KA, 50 Hz Aluminium Bus bar                                                                                                                                                     |  |      |   |
|       | Outgoing                                                                                                                                                                                                          |  |      |   |
|       | 2 Sets of 400A 4P MCCB 50 KA microprocessor controlled with overload, short circuit and earth fault protections with adjustable settings having 400/5A CTs, class- 1.0 accuracy with digital multifunction meter. |  |      |   |
|       | 1 Set of 250A 4P MCCB 50 KA microprocessor controlled with overload, short circuit and earth fault protections with adjustable settings having 250/5A CTs, class 1.0 accuracy with digital multifunction meter.   |  |      |   |
|       | 3 Sets of R, Y, B Phase indicating lights (LED Type) with 2A, SP MCB, 10KA                                                                                                                                        |  |      |   |
| 2.3.5 | <b>LTACMH-5 (Main Hospital)</b>                                                                                                                                                                                   |  | Each | 1 |
|       | Incoming                                                                                                                                                                                                          |  |      |   |
|       | 1 Set of 630A 4P MCCB 50 KA microprocessor controlled with overload, short circuit and earth fault protections with adjustable settings having 630/5A CTs, class 0.5 accuracy with digital multifunction meter.   |  |      |   |
|       | 1 Set of R, Y, B phase indicating light (LED type) with 2A, SP MCB, 10KA.                                                                                                                                         |  |      |   |
|       | Bus Bar                                                                                                                                                                                                           |  |      |   |
|       | 1000A, 415V, 4 wire, 50KA, 50 HZ Aluminium Bus Bar.                                                                                                                                                               |  |      |   |
|       | Outgoing                                                                                                                                                                                                          |  |      |   |
|       | 2 Sets of 400A 4P MCCB 50 KA microprocessor controlled with overload, short circuit and earth fault protections with adjustable setting having 400/5A CTs, class- 1.0 accuracy with digital multifunction meter.  |  |      |   |
|       | 2 Sets of 250A 4P MCCB 50 KA microprocessor controlled with overload, short circuit and earth fault protections with adjustable settings having 250/5A CTs, class 1.0 accuracy with digital multifunction meter.  |  |      |   |
|       | 4 Sets of R, Y, B Phase indicating lights (LED Type) with 2A, SP MCB, 10KA.                                                                                                                                       |  |      |   |
| 2.3.6 | <b>LTACMH-6 (Main Hospital)</b>                                                                                                                                                                                   |  | Each | 1 |
|       | Incoming                                                                                                                                                                                                          |  |      |   |

|       |                                                                                                                                                                                                                   |  |      |   |
|-------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|------|---|
|       | 1 Set of 630A 4P MCCB 50 KA microprocessor controlled with overload, short circuit and earth fault protections with adjustable settings having 630/5A CTs, class 0.5 accuracy with digital multifunction meter.   |  |      |   |
|       | 1 Set of R, Y, B phase indicating light (LED type) with 2A, SP MCB, 10KA                                                                                                                                          |  |      |   |
|       | Bus Bar                                                                                                                                                                                                           |  |      |   |
|       | 1000A, 415V, 4 wire, 50KA, 50 HZ Aluminium Bus Bar.                                                                                                                                                               |  |      |   |
|       | Outgoing                                                                                                                                                                                                          |  |      |   |
|       | 11 Sets of 250A 4P MCCB 50 KA microprocessor controlled with overload, short circuit and earth fault protections with adjustable settings having 250/5A CTs, class 1.0 accuracy with digital multifunction meter. |  |      |   |
|       | 11 Sets of R, Y, B Phase indicating lights (LED Type) with 2A. SP MCB, 10KA.                                                                                                                                      |  |      |   |
| 2.3.7 | <b>LTACMH-7 (Main Hospital)</b>                                                                                                                                                                                   |  | Each | 1 |
|       | Incoming                                                                                                                                                                                                          |  |      |   |
|       | 1 set of 630 A 4P MCCB 50 KA microprocessor controlled with overload, short circuit and earth fault protections with adjustable settings having 630/5A CTs, class-.5 accuracy with digital multifunction meter.   |  |      |   |
|       | 1 set of R, Y, B phase indicating light (LED Type) with 2A, SP MCB, 10KA                                                                                                                                          |  |      |   |
|       | Bus Bar : 700 A, 415 V, 4 Wire, 50 HZ Aluminium Bus Bar.                                                                                                                                                          |  |      |   |
|       | Outgoing                                                                                                                                                                                                          |  |      |   |
|       | 12 Sets of 250A 4P MCCB 50 KA microprocessor controlled with overload, short circuit and earth fault protections with adjustable settings having 250/5A CTs, class 1.0 accuracy with digital multifunction meter. |  |      |   |
|       | 11 Sets of R, Y, B Phase indicating lights (LED Type) with 2A, SP MCB, 10KA.                                                                                                                                      |  |      |   |
| 2.3.8 | <b>LTACMH-8 (Main hospital)</b>                                                                                                                                                                                   |  | Each | 1 |
|       | Incoming                                                                                                                                                                                                          |  |      |   |
|       | 1 Set of 250A 4P MCCB 50 KA microprocessor controlled with overload, short circuit and earth fault protections with adjustable settings having 250/5A CTs, class 0.5 accuracy with digital multifunction meter.   |  |      |   |
|       | 1 Set of R, Y, B phase indicating light (LED type) with 2A, SP MCB, 10KA                                                                                                                                          |  |      |   |
|       | Bus Bar: 300 A, 415V, 4 Wire, 50 KA, 50 Hz Aluminium Bus Bar.                                                                                                                                                     |  |      |   |
|       | Outgoing                                                                                                                                                                                                          |  |      |   |
|       | 9 Sets of 250A 4P MCCB 50 KA microprocessor controlled with overload, short circuit and earth fault protections with adjustable settings having 250/5A CTs, class 1.0 accuracy with digital multifunction meter.  |  |      |   |
|       | 9 Sets of R, Y. B Phase indicating lights (LED Type) with 2A, SP MCB, 10KA.                                                                                                                                       |  |      |   |
| 2.3.9 | <b>LTACAD (Auditorium)</b>                                                                                                                                                                                        |  | Each | 1 |
|       | Incoming                                                                                                                                                                                                          |  |      |   |
|       | 1 Set of 250A 4P MCCB 50 KA microprocessor controlled with overload. short circuit and earth fault protections with adjustable settings having 250/5A CTs, class 0.5 accuracy with digital multifunction meter.   |  |      |   |
|       | 1 set of R, Y, B phase indicating light (LED) with 2A, SP MCB, 10 KA                                                                                                                                              |  |      |   |
|       | Bus Bar: 200 A, 415V, 4 Wire, 50 KA, 50 Hz Aluminium Bus bar                                                                                                                                                      |  |      |   |
|       | Outgoing                                                                                                                                                                                                          |  |      |   |
|       | 3 Sets of 250A 4P MCCB 50 KA microprocessor controlled with overload, short circuit and earth fault protections with adjustable settings having 250/5A CTs, class-1.0 accuracy with digital multifunction meter.  |  |      |   |
|       | 3 Sets of R, Y, B Phase indicating lights (LED Type) with 2A, SP MCB, 10KA.                                                                                                                                       |  |      |   |

|        |                                                                                                                                                                                                                   |  |      |   |
|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|------|---|
| 2.3.10 | <b>LTACCNC (Nursing College)</b>                                                                                                                                                                                  |  | Each | 1 |
|        | Incoming                                                                                                                                                                                                          |  |      |   |
|        | 1 Set of 250A 4P MCCB 50 KA microprocessor controlled with overload, short circuit and earth fault protections with adjustable settings having 250/5A CTs, class-0.5 accuracy with digital multifunction meter.   |  |      |   |
|        | 1 Set of R, Y, B phase indicating light (LED type) with 2A, SP MCB, 10KA                                                                                                                                          |  |      |   |
|        | Bus Bar                                                                                                                                                                                                           |  |      |   |
|        | 100 A, 415V, 4 Wire, 50 KA, 50 Hz Aluminium Bus bar                                                                                                                                                               |  |      |   |
|        | Outgoing                                                                                                                                                                                                          |  |      |   |
|        | 4 Sets of 250A 4P MCCB 50 KA microprocessor controlled with overload, short circuit and earth fault protections with adjustable settings having 250/5A CTs, class-1.0 accuracy with digital multifunction meter.  |  |      |   |
|        | 4 Sets of R, Y, B Phase indicating lights (LED Type) with 2A, SP MCB, 10KA.                                                                                                                                       |  |      |   |
| 2.3.11 | <b>LTACAL (Admin/Library)</b>                                                                                                                                                                                     |  | Each | 1 |
|        | Incoming                                                                                                                                                                                                          |  |      |   |
|        | 1 Set of 250A 4P MCCB 50 KA microprocessor controlled with overload, short circuit and earth fault protections with adjustable settings having 250/5A CTs, class 0.5 accuracy with digital multifunction meter.   |  |      |   |
|        | 1 Set of R, Y, B phase indicating light (LED type) with 2A, SP MCB, 10KA                                                                                                                                          |  |      |   |
|        | Bus Bar                                                                                                                                                                                                           |  |      |   |
|        | 300 A, 415V, 4 Wire, 50 KA, 50 Hz Aluminium Bus bar                                                                                                                                                               |  |      |   |
|        | Outgoing                                                                                                                                                                                                          |  |      |   |
|        | 4 Sets of 250A 4P MCCB 50 KA microprocessor controlled with overload, short circuit and earth fault protections with adjustable settings having 250/5A CTs, class 1.0 accuracy with digital multifunction meter.  |  |      |   |
|        | 4 Sets of R, Y, B Phase indicating lights (LED Type) with 2A, SP MCB, 10KA.                                                                                                                                       |  |      |   |
| 2.3.12 | <b>LTACMC (Medical collage)</b>                                                                                                                                                                                   |  | Each | 1 |
|        | Incoming                                                                                                                                                                                                          |  |      |   |
|        | 1 Set of 250A 4P MCCB 50 KA microprocessor controlled with overload, short circuit and earth fault protections with adjustable settings having 250/5A CTs, class 0.5 accuracy with digital multifunction meter.   |  |      |   |
|        | 1 Set of R, Y, B phase indicating light (LED type) with 2A, SP MCB, 10KA.                                                                                                                                         |  |      |   |
|        | Bus Bar                                                                                                                                                                                                           |  |      |   |
|        | 400 A, 415V, 4 Wire, 50 KA, 50 Hz Aluminium Bus bar                                                                                                                                                               |  |      |   |
|        | Outgoing                                                                                                                                                                                                          |  |      |   |
|        | 11 Sets of 250A 4P MCCB 50 KA microprocessor controlled with overload, short circuit and earth fault protections with adjustable settings having 250/5A CTs, class 1.0 accuracy with digital multifunction meter. |  |      |   |
|        | 11 Sets of R. Y, B Phase indicating lights (LED Type) with 2A. SP MCB, 10KA.                                                                                                                                      |  |      |   |
| 2.3.13 | <b>Fire Fighting Panel (Main Hospital)</b>                                                                                                                                                                        |  | Each | 1 |
|        | Incoming                                                                                                                                                                                                          |  |      |   |
|        | 1 Set of 630A 4P MCCB 50 KA microprocessor controlled with overload, short circuit and earth fault protections with adjustable settings having 630/5A CTS, class 0.5 accuracy with digital multifunction meter.   |  |      |   |
|        | 1 Set of R, Y, B phase indicating light (LED type) with 2A, SP MCB, 10KA.                                                                                                                                         |  |      |   |
|        | Bus Bar                                                                                                                                                                                                           |  |      |   |
|        | 1000 A, 415V, TPN, 50 KA, 50 Hz Aluminium Bus bar                                                                                                                                                                 |  |      |   |

|       |                                                                                                                                                                                                                            |  |      |   |
|-------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|------|---|
|       | Outgoing                                                                                                                                                                                                                   |  |      |   |
|       | 3 Sets of 300A 4P MCCB 50 KA microprocessor controlled with overload, short circuit and earth fault protections with adjustable settings having 300/5A CTs, class 1.0 accuracy with digital multifunction meter.           |  |      |   |
|       | 3 Sets of 40A 4P MCCB 50 KA microprocessor controlled with overload, short circuit and earth fault protections with adjustable settings having 40/5A CTs, class-1.0 accuracy with digital multifunction meter.             |  |      |   |
|       | 6 Sets of R, Y, B Phase indicating lights (LED Type) with 2A, SP MCB, 10KA.                                                                                                                                                |  |      |   |
| 2.4   | <b>UPS Room</b>                                                                                                                                                                                                            |  |      |   |
| 2.4.1 | UPS Room ER-2, ER-3 & Academic Block                                                                                                                                                                                       |  | Each | 1 |
|       | <b>Incoming</b>                                                                                                                                                                                                            |  |      |   |
|       | 1 Sets of 1600A 4P ACBs 65 KA (EDO) microprocessor controlled with overload, short circuit, and earth fault protections with adjustable settings having 1600/5A CTs, class-1.0 accuracy with digital multifunction meter.  |  |      |   |
|       | 1 Set of multifunction meter with RS-485 of accuracy class-0.5, with 3 Nos. 1600/5A 15VA CTs.                                                                                                                              |  |      |   |
|       | 1 Set of R, Y, B phase indicating light (LED type) with 2A, SP MCB, 10KA                                                                                                                                                   |  |      |   |
|       | Outgoing                                                                                                                                                                                                                   |  |      |   |
|       | 2 Sets of 1000A 4P ACBs 65 KA (EDO) microprocessor controlled with overload, short circuit and earth fault protections with adjustable settings having 1000/5A CTs, class-1.0 accuracy with digital multifunction meter.   |  |      |   |
|       | Bypass                                                                                                                                                                                                                     |  |      |   |
|       | 1 Set of 1000A 4P ACBs 65 KA (EDO) microprocessor controlled with overload, short circuit ,and earth fault protections with adjustable settings having 1000/5A CTs, class-1.0 accuracy with digital multifunction meter.   |  |      |   |
|       | BCBE                                                                                                                                                                                                                       |  |      |   |
|       | 1 Sets of 1250A 4P MCCB 50 KA microprocessor controlled with overload, short circuit and earth fault protections with adjustable settings having 1250/5A CTs, class 1.0 accuracy with digital multifunction meter.         |  |      |   |
|       | 1 Set of 800 A 4P ACBs 65 KA (EDO) microprocessor controlled with overload, short circuit ,and earth fault protections with adjustable settings having 800/5A CTs, class-1.0 accuracy with digital multifunction meter.    |  |      |   |
| 2.4.2 | UPS Room Basement                                                                                                                                                                                                          |  | Each | 1 |
|       | <b>Incoming</b>                                                                                                                                                                                                            |  |      |   |
|       | 1 Sets of 2000 A 4P ACBs 65 KA (EDO) microprocessor controlled with overload, short circuit and earth fault protections with adjustable settings having 1600 /5A CTs, class-1.0 accuracy with digital multifunction meter. |  |      |   |
|       | 1 Set of multifunction meter with RS-485 of accuracy class-0.5, with 3 Nos. 1600/5A 15VA CTs.                                                                                                                              |  |      |   |
|       | 1 Set of R, Y, B phase indicating light (LED type) with 2A, SP MCB, 10KA                                                                                                                                                   |  |      |   |
|       | Outgoing                                                                                                                                                                                                                   |  |      |   |
|       | 2 Sets of 1600A 4P ACBs 65 KA (EDO) microprocessor controlled with overload, short circuit and earth fault protections with adjustable settings having 1000 /5A CTs, class-1.0 accuracy with digital multifunction meter.  |  |      |   |
|       | Bypass                                                                                                                                                                                                                     |  |      |   |
|       | 1 Sets of 1600A 4P ACBs 65 KA (EDO) microprocessor controlled with overload, short circuit and earth fault protections with adjustable                                                                                     |  |      |   |

|       |                                                                                                                                                                                                                           |  |      |   |
|-------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|------|---|
|       | settings having 1000 /5A CTS, class-1.0 accuracy with digital multifunction meter.                                                                                                                                        |  |      |   |
|       | BCBE                                                                                                                                                                                                                      |  |      |   |
|       | 2 Sets of 1600A 4P MCCB 50 KA microprocessor controlled with overload, short circuit and earth fault protections with adjustable settings having 1250/5A CTs, class 1.0 accuracy with digital multifunction meter.        |  |      |   |
| 2.4.3 | UPS Room 4th floor                                                                                                                                                                                                        |  | Each | 1 |
|       | Incoming                                                                                                                                                                                                                  |  |      |   |
|       | 1 Sets of 1250A 4P ACBs 65 KA (EDO) microprocessor controlled with overload, short circuit and earth fault protections with adjustable settings having 1600 /5A CTS, class-1.0 accuracy with digital multifunction meter. |  |      |   |
|       | 1 Set of multifunction meter with RS-485 of accuracy class-0.5, with 3 Nos. 1600/5A 15VA CTs.                                                                                                                             |  |      |   |
|       | 1 Set of R, Y, B phase indicating light (LED type) with 2A, SP MCB, 10KA                                                                                                                                                  |  |      |   |
|       | Outgoing                                                                                                                                                                                                                  |  |      |   |
|       | 2 Sets of 800A 4P ACBs 65 KA (EDO) microprocessor controlled with overload, short circuit and earth fault protections with adjustable settings having 1000 /5A CTS, class-1.0 accuracy with digital multifunction meter.  |  |      |   |
|       | Bypass                                                                                                                                                                                                                    |  |      |   |
|       | 1 Sets of 800A 4P ACBs 65 KA (EDO) microprocessor controlled with overload, short circuit and earth fault protections with adjustable settings having 1000 /5A CTS, class-1.0 accuracy with digital multifunction meter.  |  |      |   |
|       | BCBE                                                                                                                                                                                                                      |  |      |   |
|       | 1 Sets of 1250A 4P MCCB 50 KA microprocessor controlled with overload, short circuit and earth fault protections with adjustable settings having 1250/5A CTs, class 1.0 accuracy with digital multifunction meter.        |  |      |   |
|       | 1 Sets of 800A 4P MCCB 50 KA microprocessor controlled with overload, short circuit and earth fault protections with adjustable settings having 800/5A CTs, class 1.0 accuracy with digital multifunction meter.          |  |      |   |
| 2.4.5 | UPS Room Ayush building & Admin                                                                                                                                                                                           |  | Each | 1 |
|       | Incoming                                                                                                                                                                                                                  |  |      |   |
|       | 1 Set of 250A 4P MCCB 50 KA microprocessor controlled with overload, short circuit and earth fault protections with adjustable settings having 250/5A CTs, class 0.5 accuracy with digital multifunction meter.           |  |      |   |
|       | 1 Set of R, Y, B phase indicating light (LED type) with 2A, SP MCB, 10KA                                                                                                                                                  |  |      |   |
|       | Outgoing                                                                                                                                                                                                                  |  |      |   |
|       | 2 Set of 125A 4P MCCB 50 KA microprocessor controlled with overload, short circuit and earth fault protections with adjustable settings having 125/5A CTs, class 0.5 accuracy with digital multifunction meter.           |  |      |   |
|       | Bypass                                                                                                                                                                                                                    |  |      |   |
|       | 1 Set of 125A 4P MCCB 50 KA microprocessor controlled with overload, short circuit and earth fault protections with adjustable settings having 125/5A CTs, class 0.5 accuracy with digital multifunction meter.           |  |      |   |
|       | BCBE                                                                                                                                                                                                                      |  |      |   |
|       | 2 Sets of 160A 4P MCCB 50 KA microprocessor controlled with overload, short circuit and earth fault protections with adjustable settings having 160/5A CTs, class 1.0 accuracy with digital multifunction meter.          |  |      |   |
| 2.4.6 | UPS Room Nursing college                                                                                                                                                                                                  |  | Each | 1 |

|       |                                                                                                                                                                                                                  |  |      |   |
|-------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|------|---|
|       | Incoming                                                                                                                                                                                                         |  |      |   |
|       | 1 Set of 630A 4P MCCB 50 KA microprocessor controlled with overload, short circuit and earth fault protections with adjustable settings having 500/5A CTs, class 0.5 accuracy with digital multifunction meter.  |  |      |   |
|       | 1 Set of R, Y, B phase indicating light (LED type) with 2A, SP MCB, 10KA                                                                                                                                         |  |      |   |
|       | Outgoing                                                                                                                                                                                                         |  |      |   |
|       | 2 Set of 320A 4P MCCB 50 KA microprocessor controlled with overload, short circuit and earth fault protections with adjustable settings having 320/5A CTs, class 0.5 accuracy with digital multifunction meter.  |  |      |   |
|       | Bypass                                                                                                                                                                                                           |  |      |   |
|       | 1 Set of 320A 4P MCCB 50 KA microprocessor controlled with overload, short circuit and earth fault protections with adjustable settings having 320/5A CTs, class 0.5 accuracy with digital multifunction meter.  |  |      |   |
|       | BCBE                                                                                                                                                                                                             |  |      |   |
|       | 2 Sets of 400A 4P MCCB 50 KA microprocessor controlled with overload, short circuit and earth fault protections with adjustable settings having 60/5A CTs, class 1.0 accuracy with digital multifunction meter.  |  |      |   |
| 2.4.7 | UPS Room Auditorium                                                                                                                                                                                              |  | Each | 1 |
|       | Incoming                                                                                                                                                                                                         |  |      |   |
|       | 1 Set of 63A 4P MCCB 50 KA microprocessor controlled with overload, short circuit and earth fault protections with adjustable settings having 63/5A CTs, class 0.5 accuracy with digital multifunction meter.    |  |      |   |
|       | 1 Set of R, Y, B phase indicating light (LED type) with 2A, SP MCB, 10KA                                                                                                                                         |  |      |   |
|       | Outgoing                                                                                                                                                                                                         |  |      |   |
|       | 2 Set of 40A 4P MCCB 50 KA microprocessor controlled with overload, short circuit and earth fault protections with adjustable settings having 40/5A CTs, class 0.5 accuracy with digital multifunction meter.    |  |      |   |
|       | Bypass                                                                                                                                                                                                           |  |      |   |
|       | 1 Set of 40A 4P MCCB 50 KA microprocessor controlled with overload, short circuit and earth fault protections with adjustable settings having 40/5A CTs, class 0.5 accuracy with digital multifunction meter.    |  |      |   |
|       | BCBE                                                                                                                                                                                                             |  |      |   |
|       | 2 Sets of 160A 4P MCCB 50 KA microprocessor controlled with overload, short circuit and earth fault protections with adjustable settings having 160/5A CTs, class 1.0 accuracy with digital multifunction meter. |  |      |   |

### 3. TRANSFORMER

| item No. | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Make       | Unit | Qty. |
|----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|------|------|
| 3        | <b>TRANSFORMER</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |            |      |      |
| 3.1      | <b>33/0.433 kV OIL TYPE TRANSFORMER AND AVR WITH BYPASS</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |            |      |      |
|          | Operation & Comprehensive Maintenance Contract of 33 / 0.433 kV 2500 kVA, 3-phase, 50 Hz delta/star connected, indoor type transformer, oil immersed ONAN cooled transformer of following ratings, complete with all fittings such as oil conservator, silica gel breather, thermometer, explosion vent, ON Load tap changer, RTCC and AVR with +5% tapping at the step of 2.5%, bi-directional roller, diagrams & rating plate, oil temperature indicator, Winding temperature indicator and Buchholz relay with wiring up to marshalling box, lifting lugs, first filling of oil, HT/LT cable box shall be suitable for connection with cable in HT and minimum 8 mm thick nonmagnetic gland plate and suitable earthing stud, etc. complete as per specification including 10% extra oil | ANDREWYULE | Set  | 4    |

|       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |             |     |   |
|-------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|-----|---|
|       | in non-returnable drum for topping up complete with foundation, etc.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |             |     |   |
| 3.1.2 | <b>AUTOMATIC VOLTAGE REGULATOR</b><br>Operation & Comprehensive Maintenance Contract of oil immersed, naturally cooled, ON load step-less rolling contact type, indoor type, 2500 KVA with 0.433 kV output, 3 phase, 50 Hz and suitable for 28 kV to 35 kV input voltage $\pm 1\%$ variation automatic voltage regulator suitable for unbalanced load and delivering balance output voltage complete with step up & down unit, regulator, control panel, etc. housed in steel tanks filled with cooling radiators, bidirectional rollers, lifting lugs, earthing terminals, drain valve, silica gel breather, conservator, thermometer pocket, rating plate, oil level gauge, explosion vent, filter valve earthing terminal and other fittings as required and with first filling of oil, terminal arrangement on input and output side should be suitable for receiving cable with foundation, etc. |             |     |   |
| 3.2   | <b>33/0.433 KV OIL TYPE TRANSFORMER</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | ANDREWWYULE | Set | 4 |
|       | Operation & Comprehensive Maintenance Contract of 33 / 0.433 kV, 2500 kVA, OLTC 3-phase, 50 Hz delta/star connected, indoor type transformer, oil immersed ONAN cooled transformer of following ratings, complete with all fittings such as oil conservator, silica gel breather, thermometer, explosion vent, ON Load tap changer, RTCC with 5% tapping at the step of 2.5%, bi-directional, oil temperature indicator, Winding temperature indicator and Buchholz relay with wiring up to marshalling box, lifting lugs, first filling of oil. HT/LT cable box shall be suitable for connection with cable in HT and minimum 8 mm thick nonmagnetic gland plate and suitable earthing stud, etc                                                                                                                                                                                                     |             |     |   |

#### 4. LT CAPACITOR PANELS

| item No. | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Make                                                                                                                          | Unit      | Qty. |
|----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|-----------|------|
| 4        | <b>LT CAPACITOR PANELS</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                               |           |      |
|          | Operation & Comprehensive Maintenance Contract of cubicle type compartmentalized, floor mounted, LT capacitor panel of suitable size made out of not less than 2 mm thick MS sheet, dust and vermin proof and comprising of following panel mounting switchgear there in as per CPWD specifications (part IV) i/c suitable capacity 3 strip aluminium bus bar, compatible to SCADA system with spare contacts. connection inter-connection etc.<br>Note:- All MCCBs shall be microprocessor controlled with O/L & S/C along with adjustable time delays in O/L and instantaneous protection in S/C with adjustable settings. Fast semiconductor fuses for the safety of TSM (3 for each TSM) Fast discharge resistors to be used for fast discharging of capacitor. | Panel-ABB,<br>breacker-ABB,<br>Thyristor-Ducati<br>energia,<br>capacitor bank-Ducati<br>energia,<br>Reactor-Ducati<br>energia |           |      |
| 4.1      | 1096 KVAR LT Capacitor Panel- 1 & 2 (Substation-1)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                               | Each sets | 1    |
|          | Incomer                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                               |           |      |

|     |                                                                                                                                                                 |  |           |   |
|-----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|--|-----------|---|
|     | 1 Set of 1600A/2000A 3P ACBs 50 KA (EDO) microprocessor controlled with overload, short circuit and earth fault protections with adjustable settings having     |  |           |   |
|     | 1 No. power factor digital meter 1 No. APFC relay suitable for sequential operation of 15 capacitor Bank.                                                       |  |           |   |
|     | 24 V DC Shunt trip coil - 1 Set.                                                                                                                                |  |           |   |
|     | Breaker control switch - 1 Set.                                                                                                                                 |  |           |   |
|     | Three Phase Under voltage relay - 1 Set.                                                                                                                        |  |           |   |
|     | Three Phase Over voltage relay - 1 Set.                                                                                                                         |  |           |   |
|     | 1 Set "ON /OFF" push button with 2A, SP MCB, 10KA.                                                                                                              |  |           |   |
|     | One Set of IDMT Relay. (3 Phase Over Current + Earth Fault) or equivalent.                                                                                      |  |           |   |
|     | 1 No. Digital Ammeter with selector switch and 3 NO. 2000 /5A CTS.                                                                                              |  |           |   |
|     | One Set Breaker ON/OFF / TRIP indicating lights with control MCB's.                                                                                             |  |           |   |
|     | One Set of R, Y, B phase indicating light (LED type) with 2A, SP MCB, 10KA.                                                                                     |  |           |   |
|     | Bus Bar                                                                                                                                                         |  |           |   |
|     | 3000 A, 415V, 3 strip, 50 HZ Aluminium Bas Bar                                                                                                                  |  |           |   |
|     | Outgoing                                                                                                                                                        |  |           |   |
|     | 6x132 KVAR LT power capacitor banks with 6 No 100 KVAR 5.67% D tuned harmonic block reactor and TSM (Thyristor Switch Module) mounted in sheet steel enclosure. |  |           |   |
|     | 3x66 KVAR LT power capacitor banks with 3 No. 50 KVAR 5.67% D tuned harmonic block reactor and TSM (Thyristor Switch Module) mounted in sheet steel enclosure.  |  |           |   |
|     | 2x33 KVAR LT power capacitor banks with 2 No. 25 KVAR 5.67% D tuned harmonic block reactor and TSM (Thyristor Switch Module) mounted in sheet steel enclosure.  |  |           |   |
|     | 2x12.5KVAR LT power capacitor banks with 2 No. 10 KVAR 5.67% D tuned harmonic block reactor and TSM (Thyristor Switch Module) mounted in sheet steel enclosure. |  |           |   |
|     | 2x7.5 KVAR LT power capacitor banks with 2 No. 5 KVAR 5.67% D tuned harmonic block reactor and TSM (Thyristor Switch Module) mounted in sheet steel enclosure.  |  |           |   |
|     | 6 Nos. 250 Amp TP MCCB, 50KA, microprocessor controlled & 6 Nos. 250 Amps High speed semiconductor fuse at 690V.                                                |  |           |   |
|     | 3 Nos. 125 Amps TP MCCB, 50KA, microprocessor controlled & 3 Nos. 125 Amps High speed semiconductor fuse at 690V.                                               |  |           |   |
|     | 2 Nos. 63 Amps TP MCCB, 50 KA, microprocessor controlled & 2 Nos. 63 Amps High speed semiconductor fuse at 690V.                                                |  |           |   |
|     | 2 Nos 32 Amps TP MCCB, 50KA, microprocessor controlled & 2 Nos. 32 Amps High speed semiconductor fuse at 690V.                                                  |  |           |   |
|     | 2 Nos. 25 Amps TOP MCCB, 50 KA, microprocessor & 2 Nos. 25 Amps high speed semiconductor fuse at 690V.                                                          |  |           |   |
|     | Each capacitor bank must have 1 set of on/off indication LED type.                                                                                              |  |           |   |
| 4.2 | 652 KVAR -LT Capacitor panel-1 & 2 (substation-2) & LT capacitor panel-3 & 4 (substation-1)                                                                     |  | Each sets | 1 |
|     | Incomer                                                                                                                                                         |  |           |   |
|     | 1 set of 1250 A 3P ACBs 50KA (EDO) microprocessor controlled with overload, short circuit and earth fault protections with adjustable setting having:           |  |           |   |

|     |                                                                                                                                                                   |  |           |   |
|-----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|-----------|---|
|     | 1 No. power factor digital meter 1 No. APFC relay suitable for sequential operation of 10 capacitor banks.                                                        |  |           |   |
|     | 24 V DC Shunt trip coil - 1 Set.                                                                                                                                  |  |           |   |
|     | Breaker control switch - 1 Set.                                                                                                                                   |  |           |   |
|     | Three Phase Under voltage relay - 1 Set.                                                                                                                          |  |           |   |
|     | Three Phase over voltage relay - 1 Set.                                                                                                                           |  |           |   |
|     | 1 Set "ON /OFF" push button with 2A, SP MCB, 10KA.                                                                                                                |  |           |   |
|     | One Set of IDMT Relay.(3 Phase Over Current + Earth Fault) or equivalent.                                                                                         |  |           |   |
|     | 1 No. Digital Ammeter with selector switch and 3 NO. 1250 /5A CTs.                                                                                                |  |           |   |
|     | one set breaker ON/OFF / TRIP indicating lights with control MCB's.                                                                                               |  |           |   |
|     | one set of R, Y, B phase indicating light (LED type) with 2A, SP MCB, 10KA                                                                                        |  |           |   |
|     | Bus Bar                                                                                                                                                           |  |           |   |
|     | 2000A, 415 V, 3 strip, 50 KA, 50 HZ Aluminium Bus Bar.                                                                                                            |  |           |   |
|     | Outgoing                                                                                                                                                          |  |           |   |
|     | 3×132 KVAR LT power capacitor banks with 3 No 100 KVAR 5.67 % D tuned harmonic block reactor and TSM (Thyristor Switch Module) mounted in sheet steel enclosure.  |  |           |   |
|     | 2×66 KVAR LT power capacitor banks with 2 No. 50 KVAR 5.67 % D tuned harmonic block reactor and TSM (Thyristor Switch Module) mounted in sheet steel enclosure.   |  |           |   |
|     | 3×33 KVAR LT power capacitor banks with 3 No. 25 KVAR 5.67 % D tuned harmonic block reactor and TSM (Thyristor switch module) mounted in sheet steel enclosure.   |  |           |   |
|     | 2×12.5 KVAR LT power capacitor banks with 2 No. 10 KVAR 5.67 % D tuned harmonic Block reactor and TSM (Thyristor Switch Module) mounted in sheet steel enclosure. |  |           |   |
|     | 3 Nos. 250 Amps TP MCCB, 50KA, microprocessor controlled & 3 Nos. 250 Amps High speed semiconductor fuse at 690V.                                                 |  |           |   |
|     | 2 Nos. 125 Amps TP MCCB, 50KA, microprocessor controlled & 2 Nos. 125 Amps High speed semiconductor fuse at 690V.                                                 |  |           |   |
|     | 3 Nos. 63 Amps TP MCCB, 50KA, microprocessor controlled & 3 Nos. 63 Amps High speed semiconductor fuse at 690V.                                                   |  |           |   |
|     | 2 Nos. 32 Amps TP MCCB, 50KA, microprocessor controlled & 2 Nos. 32 Amps High speed semiconductor fuse at 690V.                                                   |  |           |   |
|     | Each capacitor bank must have 1 set of on/off indication LED type.                                                                                                |  |           |   |
| 4.3 | 982 KVAR LT Capacitor panel-5 & 6 (Substation-1)                                                                                                                  |  | Each Sets | 1 |
|     | Incomer                                                                                                                                                           |  |           |   |
|     | 1 set of 1600 A 3P ACBs 50KA (EDO) microprocessor controlled with overload, short circuit and earth fault protections with adjustable setting having:             |  |           |   |
|     | 1 No. Power factor digital meter 1 No. APFC relay suitable for sequential operation of 13 capacitor banks.                                                        |  |           |   |
|     | 24 V DC Shunt trip coil - 1 Set.                                                                                                                                  |  |           |   |
|     | Breaker control switch - 1 Set.                                                                                                                                   |  |           |   |
|     | Three Phase Under voltage relay - 1 Set.                                                                                                                          |  |           |   |
|     | Three Phase Over voltage relay - 1 Set.                                                                                                                           |  |           |   |
|     | 1 Set "ON /OFF" push button with 2A, SP MCB, 10KA.                                                                                                                |  |           |   |
|     | One Set of IDMT Relay.(3 Phase Over Current + Earth Fault) or                                                                                                     |  |           |   |

|  |                                                                                                                                                                   |  |  |  |
|--|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|
|  | equivalent.                                                                                                                                                       |  |  |  |
|  | 1 No. Digital Ammeter with selector switch and 3 No. 1600/5A CTs.                                                                                                 |  |  |  |
|  | One Set Breaker ON/OFF / TRIP indicating lights with control MCB's.                                                                                               |  |  |  |
|  | One Set of R, Y, B phase indicating light (LED type) with 2A, SP MCB, 10KA.                                                                                       |  |  |  |
|  | Bus Bar                                                                                                                                                           |  |  |  |
|  | 2500 A, 415 V, 3 strip, 50 KA, 50 HZ Aluminium Bus Bar.                                                                                                           |  |  |  |
|  | Outgoing                                                                                                                                                          |  |  |  |
|  | 5×132 KVAR LT power capacitor banks with 5 No. 100 KVAR 5.67 % D tuned harmonic block reactor and TSM (thyristor Switch Module) mounted in sheet steel enclosure. |  |  |  |
|  | 3×66 KVAR LT power capacitor banks with 3 No. 50 KVAR 5.67 % D tuned harmonic block reactor and TSM (thyristor Switch Module) mounted in sheet steel enclosure.   |  |  |  |
|  | 3×33 KVAR LT power capacitor banks with 3 No. 50 KVAR 5.67 % D tuned harmonic block reactor and TSM (thyristor Switch Module) mounted in sheet steel enclosure.   |  |  |  |
|  | 2×12.5 KVAR LT power capacitor banks with 2 No. 10 KVAR 5.67 % D tuned harmonic block reactor and TSM (thyristor Switch Module) mounted in sheet steel enclosure. |  |  |  |
|  | 5 Nos. 250 Amps TP MCCB, 50 KA, microprocessor controlled & 5 Nos. 250 Amps High speed semiconductor fuse at 690V.                                                |  |  |  |
|  | 3 Nos. 125 Amps TP MCCB, 50KA, microprocessor controlled & 3 Nos. 125 Amps High speed semiconductor fuse at 690V.                                                 |  |  |  |
|  | 3 Nos. 63 Amps TP MCCB, 50KA, microprocessor controlled & 3 Nos. 63 Amps High speed semiconductor fuse at 690V.                                                   |  |  |  |
|  | 2 Nos. 32 Amps TP MCCB, 50KA, microprocessor controlled & 2 Nos. 32 Amps High speed semiconductor fuse at 690V.                                                   |  |  |  |
|  | Each capacitor bank must have 1 set of on/off indication LED type.                                                                                                |  |  |  |

## 5. BUS DUCT

| item No. | Description                                                                                                                                                                                                                                                                                                                                                                                          | Make    | Unit | Qty. |
|----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|------|------|
| 5        | <b>BUS DUCT</b>                                                                                                                                                                                                                                                                                                                                                                                      |         |      |      |
|          | Operation & Comprehensive Maintenance Contract of of Pre-fabricated sandwiched Aluminium bus trunking suitable for 415 Volt 3 phase 4 wire 50Hz AC supply system of aluminium bus bars complete with bends, expansion joints, fire barriers, copper flexible end connections at both ends Earthing with 2 runs of 25 mm x 5 mm copper earth strip as per IEC 60439 including necessary supports etc. | LEGRAND | Set  | 1    |

## 6. BATTERY AND BATTERY CHARGER

| item No. | Description                                                                                                                                                                                                                                                                                                                                                          | Make                    | Unit | Qty. |
|----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|------|------|
| 6        | <b>BATTERY AND BATTERY CHARGER</b>                                                                                                                                                                                                                                                                                                                                   |                         |      |      |
|          | Operation & Comprehensive Maintenance Contract of 24V float cum boost battery and battery charger and necessary DC distribution board, instrument panel, Ammeter, Voltmeter, interconnections etc. Power supply 240 V, 1 Phase, 50 Hz $\pm$ 10% and control cabling to H.T. Panels as required for protection relays complete as per specifications and as required. | Battery Charger-CHHABBI | Set  | 2    |

## 7. EXTERNAL LIGHT

| Sl. No. | EXTERNAL LIGHT                                                                                                                                                                                                                                                                                                                                                                                                                              | Unit | Qty. |
|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|------|
|         | Comprehensive maintenance of high mast light (30 mt.) and all external lights including with all spares parts (Rope, Electric Ignitor, Choke, capacitor, holder, MCB, wire, Aviation lamp, pulley, gear, chain, LED Driver, LED strip, spares of motorizing system, nut, bolts, grease, gear oil, cotton waste, connector, fuse etc.) Except for Lamp. The maintenance tools, tackle, ladder, crane, etc. should be provided by the agency. | Sets |      |
| 7.1     | 9 meters with single overhang poles (250/150Watt)                                                                                                                                                                                                                                                                                                                                                                                           | No.  | 114  |
| 7.2     | 8 meters with double overhang poles (80 Watt LED)                                                                                                                                                                                                                                                                                                                                                                                           | No.  | 10   |
| 7.3     | 4 meters poles (40/30 Watt LED)                                                                                                                                                                                                                                                                                                                                                                                                             | No.  | 185  |
| 7.4     | 3 meters poles (40/30 Watt LED)                                                                                                                                                                                                                                                                                                                                                                                                             | No.  | 70   |
| 7.5     | 30-meter-High mast with non-integral floodlight (400watt HPSV)                                                                                                                                                                                                                                                                                                                                                                              | No.  | 7    |
| 7.6     | 30-meter-High mast with LED light                                                                                                                                                                                                                                                                                                                                                                                                           | No.  | 1    |
| 7.7     | Façade light                                                                                                                                                                                                                                                                                                                                                                                                                                | No.  | 22   |
| 7.8     | Feeder pillar panel                                                                                                                                                                                                                                                                                                                                                                                                                         | No.  | 7    |

**ANNEXURE-4****1. ONLINE UPS**

| LIST OF EQUIPMENTS |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |              |      |     |
|--------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|------|-----|
| item No.           | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Make         | Unit | Qty |
| <b>8</b>           | <b>ONLINE UPS</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |              |      |     |
| <b>8.1</b>         | <b>UPS</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |              |      |     |
|                    | Operation of 415 volts, 3-phase +10%-15%,50Hz incoming supply and three phase output voltage including provision for 1 isolation transformer, rectifier/ dual converter , bypass switch, inverter, filter, bypass & static transfer switch for automatic switch over providing static bypass module high switching frequency microprocessor based with built in in technical protections likes short circuits, overload, high/ low voltage cut off protection of load from source inclusive of bypass facility without giving any break of power, maintenance bypass switch, along with TVSS protection. Microprocessor/ software-controlled annunciation, protection (including against input phase reversal) and menu run Diagnostic module, associated cabling, connections, terminations, erection including associated Foundation/ masonry or RCC work for mounting on base channels etc. Complete as required and as per specifications. | EMERSON      |      |     |
| a)                 | 2x 400 KVA for Hospital building (Parallel Redundant)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |              | SETS | 1   |
| b)                 | 2x 500 KVA for Hospital & Medical College building (Parallel Redundant)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |              | SETS | 3   |
| c)                 | 2x 800 KVA for Hospital building (Parallel Redundant)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |              | SETS | 1   |
| e)                 | 2x 160 KVA for Nursing College building (Parallel Redundant)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |              | SETS | 1   |
| f)                 | 2x 60 KVA for Admin/ Library and Ayush Building (Parallel Redundant)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |              | SETS | 2   |
| g)                 | 2x 20 KVA for Auditorium Building (Parallel Redundant)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |              | SETS | 1   |
| h)                 | 1x200 KVA for Burn Unit                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |              | SETS | 1   |
| <b>6.2</b>         | <b>BATTERY</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |              |      |     |
|                    | Operation of Nickel-cadmium battery Banks suitable for following parallel redundant type UPS system for total 30-minute backup.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |              |      |     |
| <b>8.3</b>         | <b>ATS PANELS</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |              |      |     |
|                    | <b>ATS PANEL-1 &amp; 2</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | ASCO-EMERSON | SETS | 2   |
|                    | Operation of the following capacity ATS along with MCCB as detailed below in the existing control panel, including connections,                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |              |      |     |

|       |                                                                                                                                                                                                                                                       |  |  |  |
|-------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|
|       | interconnections as required.                                                                                                                                                                                                                         |  |  |  |
| 8.3.1 | Set of 400A 4P ATS with Bypass-isolation Switch with over lapping Neutral, for 415V, 50HZ supply. With In-Phase Monitor, Indicating Lamps & Gr.5 Micro Processor controller with 2 nos. 400A 4P MCCB with O/L, S/C and E/F microprocessor controlled. |  |  |  |

## 2. DG SETS

| item No.     | Description                                                                                                                                                                                                                                                                                                                                                   | Make             | Unit | Qty. |
|--------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|------|------|
| <b>9</b>     | <b>DG SETS</b>                                                                                                                                                                                                                                                                                                                                                |                  |      |      |
| <b>9.1</b>   | <b>D.G. SETS</b>                                                                                                                                                                                                                                                                                                                                              |                  |      |      |
|              | Operation of silent type D.G. set conforming to latest environment protection regulations for emission and noise level comprising of radiator cooled, vertical multi-cylinder diesel engine equipped with                                                                                                                                                     |                  |      |      |
|              | i) 2000 KVA (Substation-1)                                                                                                                                                                                                                                                                                                                                    | JAKSON (CUMMINS) | Nos. | 6    |
|              | ii) 1250 KVA (Substation-2)                                                                                                                                                                                                                                                                                                                                   | JAKSON (CUMMINS) | Nos. | 2    |
| <b>9.2</b>   | <b>DG Panel</b>                                                                                                                                                                                                                                                                                                                                               |                  |      |      |
|              | Operation of cubicle type LT panel suitable for 415-volt, 3 phase, 50 Hz AC supply system. All ACB shall have microprocessor-based release having O/C, S/C,E/F all adjustable and all with adjustable time delay settings and with adjustable instantaneous protection. All ACB's shall have Ics= Icu= Icw (short time withstand capacity for 1 sec. or more) |                  |      |      |
| <b>9.2.1</b> | <b>DG panel (substation- 1)</b>                                                                                                                                                                                                                                                                                                                               |                  | SET  | 1    |
|              | all incoming and outgoing ACB with bus duct Entry from top. Electrical and mechanical interlocking to be done between the barkers of D.G. incomer and bus couplers.                                                                                                                                                                                           |                  |      |      |
|              | ACB (EDO Type) microprocessor based 4P, 4000 A 65 KA with O/L, S/C & E/F releases-6Nos.                                                                                                                                                                                                                                                                       |                  |      |      |
|              | Multi-function meter-6Nos.                                                                                                                                                                                                                                                                                                                                    |                  |      |      |
|              | Resin cast current transformer 4000/5A 15 VA Class-0.5- 6Nos.                                                                                                                                                                                                                                                                                                 |                  |      |      |
|              | Resin cast current transformer 4000/5A 15 VA 5P10 Class- 0.5- 6 Nos.                                                                                                                                                                                                                                                                                          |                  |      |      |
|              | ON/OFF/TRIP and spring charged indication light (LED Type) with MCB Control-6 sets                                                                                                                                                                                                                                                                            |                  |      |      |
|              | The Protection shall be given as below or in built in genset controller.                                                                                                                                                                                                                                                                                      |                  |      |      |
|              | Reverse power relay - 6Nos                                                                                                                                                                                                                                                                                                                                    |                  |      |      |
|              | Under voltage relay- 6 Nos                                                                                                                                                                                                                                                                                                                                    |                  |      |      |
|              | Master trip relay- 6 Nos                                                                                                                                                                                                                                                                                                                                      |                  |      |      |
|              | Loss of excitation relay- 6Nos                                                                                                                                                                                                                                                                                                                                |                  |      |      |
|              | Single pole E/F relay- 6Nos                                                                                                                                                                                                                                                                                                                                   |                  |      |      |
|              | Under frequency/Over frequency relay-6Nos                                                                                                                                                                                                                                                                                                                     |                  |      |      |
|              | Over Voltage relay-6 Nos                                                                                                                                                                                                                                                                                                                                      |                  |      |      |
|              | Local/ remote selector switch-6Nos                                                                                                                                                                                                                                                                                                                            |                  |      |      |
|              | TNC Switch-6 Nos (if required)                                                                                                                                                                                                                                                                                                                                |                  |      |      |
|              | Restricted earth fault relay with 4 nos CTs for each relay-6 Nos                                                                                                                                                                                                                                                                                              |                  |      |      |
|              | Over load relay- 6Nos                                                                                                                                                                                                                                                                                                                                         |                  |      |      |
|              | Over current relay-6Nos                                                                                                                                                                                                                                                                                                                                       |                  |      |      |
|              | Ampere sentry Protection or equivalent-6Nos                                                                                                                                                                                                                                                                                                                   |                  |      |      |
|              | BU's Bar                                                                                                                                                                                                                                                                                                                                                      |                  |      |      |
|              | 5600 A, 415V, 3- Phase, TPN, 65KA, 50 Hz Aluminium bus bar                                                                                                                                                                                                                                                                                                    |                  |      |      |

|       |                                                                                                                                                                                                                           |  |     |   |
|-------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|-----|---|
|       | Out going                                                                                                                                                                                                                 |  |     |   |
|       | All outgoing must be suitable for bus duct entry from top.                                                                                                                                                                |  |     |   |
|       | 4 Sets of 4000 A 4P ACBs 65 KA (EDO) microprocessor controlled with overload, short circuit and earth fault protections with adjustable settings having 4000/5A CTs, Class-1.0 accuracy digital multifunction meter.      |  |     |   |
|       | 2 sets of 3200 A 4P ACBs 65 KA (EDO) microprocessor controlled with overload, short circuit and earth fault protections with adjustable settings having 3200/5A CTs, Class-1.0 accuracy with digital multifunction meter. |  |     |   |
|       | 1Set of 1600A 4P ACBs 65 KA (EDO) microprocessor controlled with overload, short circuit and earth fault protections with adjustable settings having 1600/5A CTs, Class-1.0 accuracy with digital multifunction meter.    |  |     |   |
|       | 7sets of Trip/Neutral/Close switch                                                                                                                                                                                        |  |     |   |
|       | 7Sets of ON/OFF/TRIP indication lights (LED type) with control fuse.                                                                                                                                                      |  |     |   |
|       | 7sets of push button with 2A, SP MCB, 10 KA,"C" Curve                                                                                                                                                                     |  |     |   |
|       | 7 sets of R,Y,B Phase indicating lights (LED type) with 2A, SP MCB, 10KA,"C" Curve                                                                                                                                        |  |     |   |
|       | Bus Coupler                                                                                                                                                                                                               |  |     |   |
|       | 2 sets of 4000A 4p 65KA electrically operated electrical draw out type air circuit breaker, with on/ off/ trip indicating lamps with control MCB's under voltage, shunt trip, breaker control switch etc.                 |  |     |   |
| 9.2.2 | <b>DG panel (substation- 2)</b>                                                                                                                                                                                           |  | SET | 1 |
|       | all incoming and outgoing ACB with bus duct Entry from top.                                                                                                                                                               |  |     |   |
|       | ACB (EDO Type) microprocessor based 4P, 2000A 65 KA with O/L, S/C & E/F releases- 3Nos.                                                                                                                                   |  |     |   |
|       | Multi-Function Meter-6Nos                                                                                                                                                                                                 |  |     |   |
|       | Resin cast current transformer 3200/5A 15 VA Class-0.5-6 Nos.                                                                                                                                                             |  |     |   |
|       | Resin cast current transformer 3200/5A 15 VA 5P10 class-0.5- 6Nos                                                                                                                                                         |  |     |   |
|       | ON/OFF/TRIP and spring charged indication light (LED Type) with MCB control- 6Sets.                                                                                                                                       |  |     |   |
|       | The Protection shall be given as below or inbuilt in genset controller.                                                                                                                                                   |  |     |   |
|       | Reverse power relay-3Nos                                                                                                                                                                                                  |  |     |   |
|       | Under voltage relay- 3Nos                                                                                                                                                                                                 |  |     |   |
|       | Master strip relay- 3Nos                                                                                                                                                                                                  |  |     |   |
|       | Loss of excitation relay- 3 Nos.                                                                                                                                                                                          |  |     |   |
|       | Single pole E/F relay-3Nos                                                                                                                                                                                                |  |     |   |
|       | Under frequency/ over frequency relay- 3 Nos                                                                                                                                                                              |  |     |   |
|       | Over voltage relay- 3Nos                                                                                                                                                                                                  |  |     |   |
|       | Local/ remote selector switch- 3 Nos                                                                                                                                                                                      |  |     |   |
|       | TNC Switch-3 Nos (If required)                                                                                                                                                                                            |  |     |   |
|       | Restricted earth fault relay with 4 nos CTs for each relay-3 Nos.                                                                                                                                                         |  |     |   |
|       | Over load relay- 3 Nos.                                                                                                                                                                                                   |  |     |   |
|       | Over Current relay- 3Nos                                                                                                                                                                                                  |  |     |   |
|       | Ampere Sentry Protection or equivalent- 3 Nos                                                                                                                                                                             |  |     |   |
|       | Bus Bar                                                                                                                                                                                                                   |  |     |   |
|       | 4000A, 415 V, 3-phase, TPN, 65 KA, 50 Hz Aluminium Bus Bar                                                                                                                                                                |  |     |   |
|       | Outgoing                                                                                                                                                                                                                  |  |     |   |
|       | All out going must be suitable for bus duct entry from top.                                                                                                                                                               |  |     |   |
|       | 2 sets of 4000A 4P ACBs 65 KA (EDO) microprocessor controlled with                                                                                                                                                        |  |     |   |

|  |                                                                                                                                                                                                           |  |  |  |
|--|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|
|  | over load, short circuit and earth fault protections with adjustable settings having 4000/5A CTs, class 1.0 accuracy with digital multifunction meter.                                                    |  |  |  |
|  | 2 sets of Trip/ Neutral/Close Switch                                                                                                                                                                      |  |  |  |
|  | 2 sets of ON/OFF/TRIP indication lights (LED Type) with control Fuse                                                                                                                                      |  |  |  |
|  | 2sets of Push Button with 2A, SP MCB, 10KA,"C" Curve                                                                                                                                                      |  |  |  |
|  | 2 sets of R,Y,B Phase indicating lights (LED Type) with 2A, SP MCB, 10KA,"C" Curve                                                                                                                        |  |  |  |
|  | BUS Coupler                                                                                                                                                                                               |  |  |  |
|  | 1 set of 2000A 4P 65KA electrically operated electrically draw out type air circuit breaker, with ON/OFF/TRIP indicating lamps with control MCB's, under voltage, shunt trip, breaker control switch etc. |  |  |  |

**ANNEXURE -C****Tools and Tackles**

1.1 The Agency shall provide all the tools and tackles listed below for the workers including measuring instruments and safety gadgets for attending maintenance and breakdown of equipment's.

1. Cutting Pliers
2. Combination Plier (6 Nos.)
3. Screw Drivers (Big & small)
4. Wire strippers
5. Line Testers (Each employee)
6. Box Spanner Set complete with socket accessories, ratchet, Allen Key sets, etc.
7. Double-end spanner set (Set of 12)
8. Ring Spanner set (Set of 12)
9. Screw Spanners of different sizes
10. Hammers of different sizes
11. Screw Driver sets of different sizes
12. Crimping tools (different sizes) as per site requirement
13. Pliers and Nose Pliers
14. Hydraulic Scissor Lift Trolley for ACB maintenance
15. Punch/ Chisel
16. Electric drilling machine
17. Blower and hot air gun (one each)
18. Vacuum cleaner
19. Digital Multi-meter (VAO Meter)
20. Digital Megger (500 V/1000 V & 5000V) - Make Megger (Mandatory)
21. Digital Earth Tester
22. Battery testing Kit and Eye safety glasses
23. Clamp on meter (high range)
24. Clamp on meter (mA range)
25. Gun Boot
26. Raincoat (6. Nos)
27. LT Safety Gloves (6 pairs)
28. Safety Belt
29. Rechargeable torch light (3 nos)
30. Safety Helmet (12 nos)
31. Ladder (Medium Height, Long Height)
32. 33 kV HT Gloves (Mandatory) with calibration certificate and warranty (4 pairs)
33. New discharge rod with 5 meters. cable (2 nos.)
34. Safety Shoes (27 Nos.)
35. Required Nos. of Lamp for Series Testing

### Technical Bid (Eligibility Criteria)

The scanned copies of the following mandatory documents to be uploaded on e-Tendering Portal in the following format.

| Sl. No. | Details/ Particulars                                                                                                                                                                                                                                             | Uploaded (Yes/No) | Page No. |
|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|----------|
| (A)     | Submitting Earnest Money Deposit.                                                                                                                                                                                                                                |                   |          |
| (B)     | FROM 'A to E' duly filled in and signed with stamp.                                                                                                                                                                                                              |                   |          |
| (C)     | Certificates of Work Experience to be issued by the officer of the rank not below Executive Engineer.<br><b>(Duly Filled in Form 'D' Performance of Works referred in Page No. 16)</b>                                                                           |                   |          |
| (D)     | Certificate of Registration for GST and acknowledgement, up to date filed return if required                                                                                                                                                                     |                   |          |
| (E)     | Attested Copies of PAN No.                                                                                                                                                                                                                                       |                   |          |
| (F)     | Copies of IT return last 3 Years.                                                                                                                                                                                                                                |                   |          |
| (G)     | Copies of Contractor's Valid Electrical License (HT and above). Refer eligibility criteria point no. 6.                                                                                                                                                          |                   |          |
| (H)     | Copies of ESI Registration (enclose latest challan copy)                                                                                                                                                                                                         |                   |          |
| (I)     | Copies of EPF Registration. (enclose latest challan copy)                                                                                                                                                                                                        |                   |          |
| (J)     | The Bidder(s) should have their Registered Office/Branch in Bhubaneswar. If not, an Office should be opened in Bhubaneswar within 30 (Thirty) Days of the award of Work. Details of Address Proof of Office located at Bhubaneswar should be given to EE(Elect.) |                   |          |
| (K)     | Declarations to be given by the Tenderer(s) (as per Page 11).                                                                                                                                                                                                    |                   |          |
| (L)     | Profit/Loss : The bidder should not have incurred any loss (Profit after Tax should be positive ) in more than two years during available the last five consecutive balance sheet , duly audited and certified by Chartered Accountant.                          |                   |          |
| (M)     | Each page of the e-tender documents should be duly signed with seal otherwise the bid shall become invalid.                                                                                                                                                      |                   |          |
| (N)     | OEM/OEM Authorized dealer / Chanel partner Certificate. (Appendix- A)                                                                                                                                                                                            |                   |          |
| (O)     | Affidavit as per <b>Annexure – I</b>                                                                                                                                                                                                                             |                   |          |
| (P)     | <i>Scanned copy of original solvency to be uploaded.</i>                                                                                                                                                                                                         |                   |          |

**AFFIDAVIT**

(To be submitted on Rs. 100/- Indian Non-Judicial Stamp Paper)

I/We hereby certify that, the above firm has not been ever blacklisted by any Central/State Government/Public Undertaking/Institute on any account.

I/We also certify that, Firm will supply the item(s) as per the specification given by Institution and also abide all the Terms & Conditions stipulated in Tender.

I/We also certify that, the information given in Bid is true and correct in all aspects and in any case at a later date, it is found that any details provided are false and incorrect, any contract given to the concerned firm or participation may be summarily terminated at any state, the firm will be blacklisted and Institute may impose any action as per e-Tender Rules.

*“I/We undertake and confirm that eligible similar works(s) has/have not been got executed through another Agency on back to back basis. Further that, if such a violation comes to the notice of Department, then I/we shall be debarred for bidding in future forever. Also, if such a violation comes to the notice of Department before date of start of work, the Engineer-in-Charge shall be free to forfeit the entire amount of Performance Guarantee”.*

Business Address: -

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Name:

(Signature of Bidder with Firm's Seal)

Place: \_\_\_\_\_

Dated: \_\_\_\_\_

Annexure – II**FORM OF PERFORMANCE SECURITY (BANK GUARANTEE)**

1. In consideration of the Executive Director, AIIMS, Bhubaneswar (hereinafter called "the Government") having offered to accept the terms and conditions of the proposed agreement between and (hereinafter called "the said Agency(s)") for the work (hereinafter called "the said agreement") having agreed to production of an irrevocable Bank Guarantee for Rs. (Rupees only) as a security/ guarantee from the Agency(s) for compliance of his obligation in accordance with the terms and conditions in the said agreement.

I/We (hereinafter referred to as Bank) hereby (Indicate the name of the Bank) undertake to pay to the Government an amount not exceeding Rs. \_\_\_\_\_ (Rupees \_\_\_\_\_ only) on demand by Government.

2. I/We do hereby undertake to pay the (Indicate the name of the Bank) amount due and payable under this Guarantee without any demur, merely on a demand from the Government stating that the amount claimed is required to meet the recoveries due or likely to be due from the said Agency(s). Any such demand made on the Bank shall be conclusive as regards the amount due and payable by the bank under this Guarantee. However, our liability under this guarantee shall be restricted to an amount not exceeding Rs. \_\_\_\_\_ (Rupees \_\_\_\_\_ only).

3. I/We the said bank undertake to pay to the Government any money so demanded not withstanding any dispute or disputes raised by the Agency (s) in any suit or proceeding pending before any court or Tribunal relating thereto, our liability under this present being absolute and unequivocal.

4. The payment so made by us under this bond shall be valid discharge of our liability for payment there under and the Agency (s) shall have no claim against us for making such payment.

5. I/ We further agree that the guarantee herein contained (Indicate the name of Bank) shall remain in full force and effect during the period that would be taken for the performance of the said agreement and it shall continue to be enforceable till all the dues of the Government under or by virtue of the said agreement have been fully paid, and its claims satisfied or discharged, or till Engineer-in- charge on behalf of the Government, certifies that the terms and conditions of the said Agreement have been fully and properly carried out by the said Agency (s) accordingly discharges this guarantee.

6. I/We further agree with the Government that the (Indicate the name of Bank) Government shall have the fullest liberty without our consent, and without affecting in any manner our obligations hereunder, to vary any of the terms and conditions of the said agreement or to extend time of performance by the said Agency(s) from time to time or to postpone for any time or from time to time any of the powers exercisable by the Government against the said Agency (s) and to forebear or enforce any of the terms and conditions relating to the said agreement & we shall not be relieved from our liability by reasons of any such variation or extension being granted to the said Agency (s) or for any forbearance, act of omission on that part of the Government or any indulgence by the Government to the said Agency (s) or by any such matter or thing whatsoever which under the law relating to sureties would, but for this provision, have effect of so relieving us.

7. The guarantee will not be discharged due to the change in the constitution of the Bank or the Agency (s). We lastly undertake not to revoke this (Indicate the name of Bank) guarantee except with the previous consent of the Government in writing.

8. This Guarantee shall valid up to \_\_\_\_\_ unless extended on demand by Government, notwithstanding anything mentioned above, our liability against this Guarantee is restricted to Rs. \_\_\_\_\_ (Rupees \_\_\_\_\_ only) and unless a claim in writing is lodged with us within six months of the date of expiry or the extended date of expiry of this Guarantee all our liabilities under the Guarantee shall stand discharged.

Dated the \_\_\_\_\_ day of \_\_\_\_\_ for \_\_\_\_\_

**Format for Agreement**  
**(To be made on Rs 100/- Judicial Stamp Paper)**

This Agreement is made at.....on this.....day of.....2023.

**BETWEEN**

Executive Director, AIIMS, Bhubaneswar represented through Executive Engineer (Electrical), AIIMS, BHUBANESWAR, ....., (Hereinafter referred as the) (Address) "**Principal/Owner**", which expression shall unless repugnant to the meaning or context hereof include its success or sand permitted as signs)

**AND**

..... (Name and Address of the Individual/firm/Company) through..... (Hereinafter referred to as the (Details of duly authorized signatory)

"**Bidder/Contractor**" and which expression shall unless repugnant to the meaning or context hereof include its success or sand permitted as signs)

**Preamble**

WHEREAS, the Principal/Owner has floated the Tender (NIT No. **AIIMS/BBSR/ENGG/ELECT/20/2023**) (here in after refer red to as "**Tender/Bid**") and intends to award, under laid down organizational procedure, contract for: "**Operation and Comprehensive Annual Maintenance Contract of 33/0.433 KV Substation (I & II) and Operation Services of DG Set at Housing Campus AIIMS, Bhubaneswar**" herein after referred to as the "**Contract**".

**AND** WHEREAS the Principal/Owner values full compliance with all relevant laws of the Land, Rules & Regulations, Economic use of resources and of fairness/ transparency in its relation with its Bidder(s) and Contractor(s).

**AND** WHEREAS to meet the purpose afore said both the parties have agreed to enter to this Agreement (hereinafter referred to as "**Pact**"), the terms and conditions of which shall also be read as integral part and parcel of the Tender/Bid documents and Contract between the parties.

NOW, THEREFORE, inconsideration of mutual covenants contained in this Pact, the parties hereby agree as follows and this Pact witnesses as under: -

**Article - 1: Commitment of the Principal/Owner.**

1. The Principal/Owner commit itself to take all measures necessary to prevent corruption and to observe the following principles:

(a) No employee of the Principal/Owner, personally or through any of his/her family members, will in connection with the Tender, or the execution of the Contract, demand, take a promise for or accept, for self or third person, any material or immaterial benefit which the person is not legally entitled to.

(b) The Principal/Owner will, during the Tender process, treat all Bidder(s) with equity and reason. The Principal/Owner will, in particular, before and during the Tender process, provide to all Bidder(s) the same information and will not provide to any Bidder(s) confidential/additional information through which the Bidder(s) could obtain an advantage in relation to the Tender processor the Contract execution.

(c) The Principal/Owner shall endeavor to exclude from the Tender process any person, whose

conduct in the past has been of biased nature.

2. If the Principal/Owner obtains information on the conduct of any of its employees which is a criminal offence under the Indian Penal Code (IPC)/Prevention of Corruption Act, 1988 (P C Act) or is in violation of the principles herein mentioned or if there be a substantive suspicion in this regard, the Principal/Owner will inform the Chief Vigilance Officer and in addition can also initiate disciplinary actions as per its internal laid down policies and procedures.

#### **Article - 2: Commitment of the Bidder(s)/Contractor(s)**

1. It is required that each Bidder/Contractor (including their respective officers, employees and agents) adhere to the highest ethical standard and makes, and report to the Government/Department all suspected acts of **fraud or corruption or Coercion or Collusion** of which it has knowledge or becomes aware, during the tendering process and throughout the negotiation or award of a contract.

2. The Bidder(s)/Contractor(s) commit himself to take all measures necessary to prevent corruption. He commits himself to observe the following principles during his participation in the Tender process and during the Contract execution: -

(a) The Bidder(s)/Contractor(s) will not, directly or through any other person or firm, offer, promise or give to any of the Principal/Owner's employees involved in the Tender process or execution of the Contract or to any third person any material or other benefit which he/she is not legally entitled to, in order to obtain in exchange any advantage of any kind what so ever during the Tender process or during the execution of the Contract.

(b) The Bidder(s)/Contractor(s) will not enter with other Bidder(s) into any undisclosed agreement or understanding, whether formal or informal. This applies in particular to prices, specifications, certifications, subsidiary contracts, submission or non-submission of bids or any other actions to restrict competitiveness or to cartelize in the bidding process.

(c) The Bidder(s)/Contractor(s) will not commit any offence under the relevant IPC/PC Act. Further the Bidder(s)/Contract(s) will not use improperly, (for the purpose of competition or personal gain), or pass on to others, any information or documents provided by the Principal/Owner as part of the business relationship, regarding plans, technical proposals and business details, including information contained or transmitted electronically.

(d) The Bidder(s)/Contractor(s) of foreign origin shall disclose the names and addresses of agents/representatives in India, if any. Similarly, Bidder(s)/Contractor(s) of Indian Nationality shall disclose names and addresses of foreign agents/representatives, if any. Either the Indian agent on behalf of the foreign principal or the foreign principal directly could bid in a tender but not both. Further, in cases where an agent participate in a tender on behalf of one manufacturer, he shall not be allowed to quote on behalf of another manufacturer along with the first manufacturer in a subsequent/parallel tender for the same item.

(e) The Bidder(s)/Contractor(s) will, when presenting his bid, disclose any and all payments he has made, is committed to, or intends to make to agents, brokers or any other intermediaries in connection with the award of the Contract.

3. The Bidder(s)/Contractor(s) will not instigate third persons to commit offences outlined above or be an accessory to such offences.

4. The Bidder(s)/Contractor(s) will not, directly or through any other person or firm indulge in fraudulent practice **means a wilful misrepresentation or omission of facts or submission of fake/forged documents in order to induce public official to act in reliance thereof, with the purpose of obtaining unjust advantage by or causing damage to justified interest of others and/or to influence the procurement process to the detriment of the Government interests.**

5. The Bidder(s)/Contractor(s) will not, directly or through any other person or firm use Coercive Practices (means the act of obtaining something, compelling an action or influencing a decision through intimidation, threat or the use of force directly or indirectly, where potential or actual injury may be fall upon a person, his/her reputation or property to influence their participation in the tendering process).

### **Article - 3: Consequences of Breach.**

Without prejudice to any rights that may be available to the Principal/Owner under law or the Contract or its established policies and laid down procedures, the Principal/Owner shall have the following rights in case of breach of this Integrity Pact by the Bidder(s)/Contractor(s) and the Bidder/Contractor accepts and undertakes to respect and uphold the Principal/Owner's absolute right: -

1. If the Bidder(s)/Contractor(s), either before award or during execution of Contract has committed a transgression through a violation of Article-2 above or in any other form, such as to put his reliability or credibility in question, the Principal/Owner after giving 14 days notice to the contractor shall have powers to disqualify the Bidder(s)/Contractor(s) from the Tender process or terminate/determine the Contract, if already executed or exclude the Bidder/Contractor from future contract award processes. The imposition and duration of the exclusion will be determined by the severity of transgression and determined by the Principal/Owner. **Such exclusion may before vigor for a limited period as decided by the Principal/Owner.**
2. **Forfeiture of Performance Guarantee/Security Deposit :** If the Principal/Owner has disqualified the Bidder(s) from the Tender process prior to the award of the Contract or terminated/determined the Contractor has accrued the right to terminate/determine the Contract according to Article-3(1), the Principal/Owner apart from exercising any legal rights that may have accrued to the Principal/Owner, may in its considered opinion forfeit the entire amount of Performance Guarantee and Security Deposit of the Bidder/Contractor.
3. **Criminal Liability:** If the Principal/Owner obtains knowledge of conduct of a Bidder or Contractor, or of an employee or a representative or an associate of a Bidder or Contractor which constitutes corruption within the meaning of IPC Act, or if the Principal/Owner has substantive suspicion in this regard, the Principal/Owner will inform the same to law enforcing agencies for further investigation.

### **Article - 4: Previous Transgression.**

1. The Bidder declares that no previous transgressions occurred in the last 05 years with any other Company in any country confirming to the anticorruption approach or with Central Government or State Government or any other Central/State Public Sector Enterprises in India that could justify his exclusion from the Tender process.
2. If the Bidder makes incorrect statement on this subject, he can be disqualified from the Tender processor action can be taken for banning of business dealings/holiday listing of the Bidder/Contractor as deemed fit by the Principal/Owner.
3. If the Bidder/Contractor can prove that he has resorted/recouped the damage caused by him and has installed a suitable corruption prevention system, the Principal/ Owner may, at its own discretion, revoke the exclusion prematurely.

### **Article - 5: Equal Treatment of all Bidders/Contractors/Sub-contractors.**

1. The Bidder(s)/Contractor(s) undertake(s) to demand from all sub-contractors a commitment in conformity with this Pact. The Bidder/Contractor shall be responsible for any violation(s) of the principles laid down in this agreement/Pact by any of its Sub-contractors/sub-vendors.
2. The Principal/Owner will enter in to Pacts on identical terms as this one with all Bidders and Contractors.

3. The Principal/Owner will disqualify Bidders, who do not submit, the duly signed Pact between the Principal/Owner and the bidder, along with the Tender or violate its provisions at any stage of the Tender process, from the Tender process.

#### **Article - 6: Duration of the Pact.**

1. This Pact begins when both the parties have legally sign edit. It expires for the Contractor/Vendor 12 months after the completion of work under the contractor till the continuation of defect liability period, whichever is more and for all other bidders, till the Contract has been awarded.

2. If any claim is made/lodged during the time, the same shall be binding and continue to be valid despite the lapse of this Pacts as specified above, unless it is discharged/determined by the Competent Authority, AIIMS, Bhubaneswar.

#### **Article - 7: Other Provisions.**

1. This Pact is subject to Indian Law, place of performance and jurisdiction is the **Bhubaneswar** of the Principal/Owner, who has floated the Tender.

2. Changes and supplements need to be made in writing. Side agreements have not been unmade.

3. If the Contractor is a partnership or a consortium, this Pact must be signed by all the partners or by one or more partner holding power of attorney signed by all partners and consortium members. In case of a Company, the Pact must be signed by a representative duly authorized by board resolution.

4. should one or several provisions of this Pact turnout to be invalid; the remainder of this Pact remains valid. In this case, the parties will strive to come to an agreement to their original intensions.

5. It is agreed term and condition that any dispute or difference arising between the parties with regard to the terms of this Agreement/Pact, any action taken by the Owner/Principal in accordance with this **Agreement/Pact or interpretation thereof shall not be subject to arbitration.**

#### **Article - 8: LEGAL AND PRIOR RIGHTS.**

All rights and remedies of the parties hereto shall be in addition to all the other legal rights and remedies belonging to such parties under the Contract and/or law and the same shall be deemed to be cumulative and not alternative to such legal rights and remedies aforesaid. For the sake of brevity, both the Parties agree that this Integrity Pact will have precedence over the Tender/Contact documents with regard any of the provisions covered under this Pact.

#### **Article – 9: Terms And Conditions of Payment**

a. The Running payments for the work done shall be released **MONTHLY** by AIIMS, Bhubaneswar. The vendor shall submit the documents along with the bill .

- (i) Delivery Challan of all the material supplied.
- (ii) Test Certificate of Equipment.
- (iii) Monthly Challans of EPF and ESI deposits up to previous month.
- (iv) Master Roll & Wages register signed by workers of each month.
- (v) Copies of attendance Register
- (vi) Preventive Maintenance Record
- (vii) Bank Account details/ e-payment details of the vendor.
- (viii) Warranty/Guarantee Certificate if applicable.
- (ix) GST return up-to-date Voucher.
- (x) Bank statements against salary credit of Manpower deployed.
- (xi) Colour Photos for Executed work on glossary paper.
- (xii) Noclaim certificate (Final bill)

## (xiii) Certified copies of Annexure – B (Individual Equipment)

- b. The Security Deposit @ 2.5% of gross amount of the bill shall be deducted from the running bills, which shall be released after successful completion of Defects Liability Period i.e. six months from the date of completion of work, without any interest thereupon.
- c. The Income Tax as application shall be deducted from the bills unless exempted by the Income Tax Department.
- d. Any breakdown/service of substation equipment must be rectified/ attended within stipulated period as directed by EIC, failing which the same work will be taken up by the AIIMS authority in risk and cost basis and the payment for the same will be deducted in next RA bill.
- e. In case of any failure of / delay in services the penalty shall be invoked as per Clause-2 of GCC of CPWD works-2020, by the as per schedule F.
- f. All melba/rubbish/waste, garbage etc generated due to any operation and maintenance work, the same shall be disposed of by the Agency to the authorized municipal dumping ground and nothing extra shall paid on this account. In case of non-removal/disposal in the specified period, a compensation of ₹ 1000/- (Rupee One Thousand only) per day shall be recovered from the Agency.
- g. In case of less deployment of staff from the contract if found at any time at site, **Rs 10,000/-** shall be deducted from next RA bill for this purpose.
- h. In case the Vendor/Agency will not give the salary in time i.e. 7<sup>th</sup> of every month to the employee deployed to perform the work in site, a compensation of ₹ **1000/-** (Rupee One Thousand only) per day shall be recovered from the RA bill of the Agency.
- i. The Agency shall maintain the installations clean and tidy inside as well as around the installations and buildings. No rags and waste etc. shall be thrown near the building. This shall be deposited in the dustbins provided nearby. If Substation area mention in the scope is found untidy a lump sum amount **(Rs. 1000/- per day)** will be deducted from the Agency's bill.
- j. If the vendor will not supply the material as per requisition within the stipulated time period mentioned in tender then **Rs 1000/-** per day will be deducted from the Agency's bill.
- k. The Agency will maintain attendance records of the staff, which will be the checked by the Junior Engineer/Assistant Engineer/ Engineer-in-charge. In case of absence of any staff, recovery shall made at the following rates: -
  - (a) **High Skilled labour @ Rs.1,500/- per day per person.**
  - (b) **Skilled labour @ Rs.1,200/- per day per person.**
  - (c) **Un-skilled labour @ Rs.1,000/- per day per person**
- l. The agency shall submit final bill along with all the documents related with PF, ESIC to AIIMS, Bhubaneswar in addition to all maintenance schedule register, documents etc. related to the work. The agency also formally handover the list of equipment's in good working condition, without any damage as handed over to them by AIIMS, Bhubaneswar.

**The other terms and conditions stated below: -**

- (a) All the Terms & conditions of the Tender document will form as the part of this Agreement.
- (b) The agency shall be solely responsible for compliance to provisions of various Labour, Industrial and any other Laws applicable and all Statutory Obligations such as Wages, Allowances, Compensations, EPF, Bonus, Gratuity, ESI etc. relating to personnel deployed in AIIMS, Bhubaneswar. The client shall have no liability in this regard.
- (c) The Agency shall be solely responsible for any Accident/Medical/Health related Liabilities/Compensation for the personnel deployed at it at AIIMS, Bhubaneswar site. The Client shall have no liability in this regard.

- (d) Any violation of Instructions/Agreement or Suppression of facts will attract cancellation of Agreement without any reference or any notice period.
- (e) The Contract can be terminated by giving 01 (One) Month Notice by the AIIMS, Bhubaneswar.
- (f) In case of Non-Compliance with the contract, the Client reserves its right to: -
  - (i) Cancel/Revoke the contract; **and/or**
  - (ii) Impose penalty up to 10% of the total Annual Value of Contract.
- (g) Performance Security of 3 % of the Annual Contract Value, whichever is higher in the form of Fixed Deposit Receipt or Bank Guarantee form a scheduled Bank shall be furnished by the Agency at the time of signing of the Agreement.
- (h) The Agency Shall be fully responsible for timely monthly payment of wages i.e. by 07<sup>th</sup> of every month without fail and any other dues to the personnel deployed at AIIMS, Bhubaneswar as per rates mentioned in the schedule without any deductions except PF & ESI as admissible.
- (i) The personnel provided by the Agency will not claim to become the employees of AIIMS, Bhubaneswar and there will be no employee and Employer relationship between the personnel engaged by the Agency & AIIMS, Bhubaneswar.
- (j) There would be no increase in rates payable to the Agency during the Contract Period except any revision by the MoH & FW, Govt. of India.
- (k) The Agency also agrees to comply with annexed Terms & Conditions of the Tender and amendments thereto from time to time.
- (l) Decision of Client in regard to interpretation of the Terms & Conditions of the Tender shall be final and binding on the Agency.
- (m) The Agency shall ensure full compliance with Tax Laws of India with regard to this contract and shall be solely responsible for the same. The Agency shall keep Client fully indemnified against liability of Tax, Interest, Penalty and any other legal Liability etc. of the Agency in respect thereof, which may arise. No Service Tax will be paid by AIIMS, Bhubaneswar. The Books of Accounts of the Agency as regards this outsourcing work shall be open for examination by the Institute as and when required.
- (n) In case of any dispute between the Agency and Client, Client shall have the right to decide. However, all matters of jurisdiction shall be at the Local Courts of Bhubaneswar.
- (o) The Agency will provide Police Verification Certificate of each Employee within a period of 03 (Three) Months from the date of deployment except in respect of Ex-Servicemen and retired Government Employees. Failing this, the deployment shall be liable for cancellation.
- (p) THIS AGREEMENT will take effect from the \_\_\_\_\_ day of \_\_\_\_\_ Month of \_\_\_\_\_ **2023(Two Thousand Twenty-three)** and shall be valid for **02 (Two) Year** and extendable for another 01 (One) year on mutually agreeable conditions subject to satisfactory performance.

This day of \_\_\_\_\_ 2022, both the parties here to have caused their respective common seals to be hereunto affixed (or have hereunto set their respective hands and seals) the day and year mentioned above in Bhubaneswar in the presence of the witness: -

For and on behalf of the 'AIIMS, Bhubaneswar'

For and on behalf of the 'Agency'

Signature of the Authorized Official  
(Name of the Official with Seal)

Signature of the Authorized Official  
(Name of the Official with Seal)

By the said \_\_\_\_\_  
\_\_\_\_\_ (Name)  
\_\_\_\_\_ on behalf of 'Agency'  
in presence of Witness \_\_\_\_\_  
Name \_\_\_\_\_  
Address \_\_\_\_\_

By the said \_\_\_\_\_  
\_\_\_\_\_ (Name)  
\_\_\_\_\_ on behalf of 'Agency'  
in presence of Witness \_\_\_\_\_  
Name \_\_\_\_\_  
Address \_\_\_\_\_

**PROFORMA OF SCHEDULES - F (ELECTRICAL)****SCHEDULE 'A'**

Schedule of quantities : **Attached**

**SCHEDULE 'D'**

Extra schedule for specific requirements/  
document for the work, if any. : **Nil**

**SCHEDULE 'E'**

Reference to General Conditions of contract : CPWD General Conditions of Contract 2020 (maintenance) modified and amendment up to the last date of submission of tender.

**Name of work** : **Operation and Comprehensive Annual Maintenance Contract of 33/0.433 KV Substation (I & II) and External Light with Operation Services of DG Set & UPS at Hospital Campus AIIMS, Bhubaneswar.**

Estimated cost of work : **Rs. 3,87,29,507.00**

(i) Earnest money : **Rs. 7,74,600.00**

(ii) Performance Guarantee : 3% of tendered value.

(iii) Security Deposit : 2.5% of tendered value.

**SCHEDULE 'F'****GENERAL RULES & DIRECTIONS:**

Officer inviting tender : **Executive Engineer (Electrical), AIIMS Bhubaneswar on behalf of Executive Director AIIMS Bhubaneswar.**

Maximum percentage for quantity of items of work to be executed beyond which rates are to be determined in accordance with Clauses 12.2 & 12.3. : See below

**Definitions:**

**2(v) Engineer-in-Charge** : **Superintending Engineer, AIIMS Bhubaneswar (Odisha)**

**2(viii) Accepting Authority** : **Executive Director, AIIMS Bhubaneswar (Odisha)**

**2(x) Percentage on cost of materials and labour to cover all overheads and profits.** : **NA**

**2(xi) Standard Schedule of Rates** : **As per Market Rates**

**2(xii) Department** : **Engineering Department, AIIMS Bhubaneswar.**

**9(ii) Standard CPWD contract Form** : **GCC 2020 & CPWD Form-7/8 as modified & corrected up to last date of receipt of Bid/tender.**

**CLAUSE 1**

(i) Time allowed for submission of Performance

Guarantee, programme chart  
(Time and progress) and applicable labour : **15 Days**  
Licenses, registration with EPFO,  
ESIC and BOCW welfare board or proof of applying  
Thereof from the date of issue of letter of acceptance  
(ii) Maximum allowable extension with late fee : **15 Days**  
@ 0.1% per day of Performance Guarantee  
amount beyond the period Provided in (i) above

**CLAUSE 2**

Authority for fixing compensation under clause 2 : Superintending Engineer / Executive Director,  
AIIMS Bhubaneswar.

**Clause 2A**

Whether Clause 2A shall be applicable : **NA**

**CLAUSE 5**

Number of days from the date of issue  
of letter of acceptance for reckoning  
date of start : **14 Days**  
Time allowed for execution of work – 365 days.

**Authority to decide:**

(i) Extension of time : Executive Engineer, AIIMS Bhubaneswar  
(ii) Rescheduling of mile stones : Superintending Engineer/ Executive Director,  
AIIMS Bhubaneswar  
(iii) Shifting of date of start in case  
of delay in handing over of site : Superintending Engineer/ Executive Director,  
AIIMS Bhubaneswar

**PROFORMA OF SCHEDULES****CLAUSE 5**

Schedule of handing over of site

| Part   | Portion of Site                                 | Description | Time Period for handing over<br>reckoned from date of issue of letter<br>of Intent. |
|--------|-------------------------------------------------|-------------|-------------------------------------------------------------------------------------|
| Part A | Portion without any hindrance                   | All works   | 14days                                                                              |
| Part B | Portions with encumbrances                      | NA          | NA                                                                                  |
| Part C | Portions dependent on work of other<br>agencies | NA          | NA                                                                                  |

**Applicable clause 5/ Clause 5A** : **NA**

**CLAUSE 7 A**

Whether clause 7A shall be applicable : **NA**

**CLAUSE 10A** : **As required by Engineer-In-Charge**

**CLAUSE 10B (i)**

Whether Clause 10 B (i) shall be applicable : **Not Applicable**

**CLAUSE 10C**

Component of labour expressed as  
percent of value of work : **Applicable**

**CLAUSE 10CC** : **Not Applicable**

**Clause 11**

Specifications to be followed for

execution of work : **CPWD Specifications General Specifications for Electrical Works - Internal - 2005 with modification up to last date of tender submission.**

## CLAUSE 12

Authority to decide deviation up to 1.5 times of tendered amount : **Executive Director, AIIMS Bhubaneswar**

### 12.2&12.3

Deviation Limit beyond which clauses

12.2 & 12.3 shall apply for building work : As per CPWD Works Manual-2022

### 12.5

(i) Deviation Limit beyond which clauses

12.2 & 12.3 shall apply for foundation work

(except items mentioned in earth work subhead in DSR and related items) : As per CPWD Works Manual-2022

(ii) Deviation Limit for items mentioned in earth

work subhead of DSR and related items : As per CPWD Works Manual-2022

## CLAUSE 16

Competent Authority for deciding reduced rates. : Superintending Engineer/Executive Director, AIIMS Bhubaneswar

## CLAUSE 18

List of mandatory machinery, tools & plants to be deployed by the contractor at site : As required by Engineer -in- Charge

**CLAUSE 19 C**.....Engineer- in charge

**CLAUSE 19 D**..... Engineer- in charge

**CLAUSE 19 G** ..... Engineer- in charge

**CLAUSE 19 K** ..... Engineer- in charge

## CLAUSE 25

Constitution of Dispute Redressal Committee (DRC) : **AIIMS, Bhubaneswar**

**CLAUSE 32** : **Applicable**

### Requirement of Technical Representative(s) and recovery Rate

| SNo | Minimum Qualification of Technical Representative | Discipline | Designation (Principal Technical / Technical representative) | Minimum experience | Number | Rate at which recovery shall be made from the contractor in the event of not fulfilling provision of Clause 32(i) |                                        |
|-----|---------------------------------------------------|------------|--------------------------------------------------------------|--------------------|--------|-------------------------------------------------------------------------------------------------------------------|----------------------------------------|
|     |                                                   |            |                                                              |                    |        | Figures                                                                                                           | Words                                  |
| 1   | Graduate Engineer                                 | Electrical | Principal Technical Representative                           | 2 - years          | ONE    | Rs. 15,000/- PM                                                                                                   | Rupees Fifteen Thousand Per Month each |
| OR  | Diploma Engineer                                  | Electrical | (Project Planning/ Site/ billing Engineer)                   | 5-years            | ONE    | Rs.15000/- PM.                                                                                                    | Rupees Fifteen Thousand Per Month each |

Assistant Engineers retired from Government services that are holding Diploma will be treated at par with Graduate Engineers. Diploma holder with minimum 10 year relevant experience with a reputed construction co. can be treated at par with Graduate Engineers for the purpose of such deployment subject to the condition that such diploma holders should not exceed 50% of requirement of degree engineers.

**CLAUSE 38** : **Not Applicable**

**Annexure -2****SPECIAL CONDITIONS (SCOPE OF WORK)**

1. The Agency shall be solely responsible for maintenance and upkeep of the equipment's in good conditions.
2. The supplying and topping up of transformer oil as and when required, filtration and centrifuging of oil once in a year and with required quantity of material for maintenance such as tools and instruments, CTC, cloth, sand paper, nut and bolts with washer (SS), petroleum jelly, lubricating oil greases, HRC fuses for control supply and indication lamps shall also be covered in scope of work.
3. The preventive maintenance schedule shall be prepared and submitted in advance. The necessary shutdown may be taken with prior permission of the Engineer-in-Charge.
4. **The Testing, Calibration and periodical service of the equipment's shall be carried out by OEM/ OEM authorized agency (ABB, Schneider, etc. as per the maintenance schedule annexure B and the agency has to submit proper testing/Checking report to the engineering in charge)**
5. Performa for weekly, quarterly and yearly checking should be filled up after doing preventive maintenance of equipment's. The maintenance records shall be checked and verified by the competitive authority (One set of weekly, Quarterly, Half yearly and Yearly maintenance and repair chart/Performa shall be provided by the Deptt).
6. A suitable complete shutdown shall be given once in a year for preventive maintenance of the complete system. All the equipment's should be thoroughly checked and maintained for proper functioning/operations of the equipment.
7. The payment against maintenance during the contract period shall be made against monthly/quarterly running bills of the accepted amount for CMC subject to satisfactory maintenance of the installation and submission of all formats such as weekly, monthly quarterly & yearly as provided by the Engineer-in-Charge duly filled and accepted by JE/AEE of the work.
8. Testing, calibrating and setting of all the relays, KWH meters installed at different substations has to be done as per the maintenance schedule attached at **Annexure-B** and report has to be submitted by the Agency in the office of JE/AE of the work.
9. The adequate team of manpower shall be available at site as per quantum of the work.
10. The agency will be laying the cable and providing the jointing kit if the HT/LT cable is found faulty.
11. H.S.D. Oil, Water and Electricity for operation/maintenance will be arranged by the Department.
12. Liaising work with local Electricity Board and Client for arranging shutdown of HT/LT lines for any repair work will be the responsibility of the Agency without any extra cost.
13. The Agency shall keep himself fully informed of all acts and laws of the Central and State Govt., all order, decrees of statutory bodies, tribunals having jurisdiction or authority, which in any manner any affect their engaged or employed staff and anything related to carry out the work. All the rules and regulations and bye-laws laid down by the local bodies and any other statutory bodies shall be adhered to, by the Agency, during the execution of work.

14. In case of any fault in the installation covered under this work requiring immediate rectification of the same to put the installation in running condition, the firm have to rectify the fault and if any material is required in doing so, shall also arrange the same within a reasonable time.
15. The agency shall keep minimum spare and consumable materials at site for day-to-day maintenance and attended the breakdowns. The spare list kept at site to be submitted JE / AE before commence the work.
16. Agency shall be have to arrange full demonstration drill of installations to ensure the perfect working installation once in a month with prior intimation of date of demonstration in presence of Engineer in charge and a certificate in this respect shall be submitted regularly.
17. Suitable logbook for operation, testing and register for preventive maintenance carried out as per manufacture, IS standard recommendation shall be maintained by the agency and shown to JE /AE /Engineering In charge of the site fortnightly.
18. Round the clock i/c watch and ward of the equipment shall be the Agency responsibility and any losses and damage to the equipment shall have to be made good / repaired/replaced as per the original standards /specification of the department, by the Agency at his own cost and nothing extra shall be paid by the department.
19. **Exclusion: (Not cover under the scope)**
  - A. The following items/spares not under scope of the CMC -
    - i) Replacement of transformer/ACB/VCB/MCCB/Relay/Complete Panel.
    - ii) Replacement of LT / HT cable
    - iii) Ageing components of LT capacitors bank.
    - iv) Replacement of LED Light, HPSV Lamp
  - B. Exclusion item / spare shall be provided by the AIIMS as and when required at site.
20. The Agency has to replace 2 no. HT Panel battery banks of battery charger, the specification of each battery is 2V, 140AH.
21. The Agency has also to replace battery banks of LT panel, PLC Panel as per the specification of each battery.
22. The Agency shall maintain the installations clean and tidy inside as well as around the installations and buildings. No rags and waste etc. shall be thrown near the building. This shall be deposited in the dustbins provided nearby. If Substation area mentioned in the scope is found untidy a lump sum amount **(Rs. 1000/- per day)** will be deducted from the Agency's bill.
23. **ID Pass:** The Contract shall issue the ID cards of the selected manpower before the start the work.
24. Agency has to maintain the cleanliness of the entire substation campus, and DG SET yard along with its peripheries. Agency shall provide required furniture for smooth operation of the substation's and DG official works. All the unserviceable material shall be kept in authorized place before handing over to the AIIMS.
25. The employees for the Agency shall be of good character and of sound. The service provider shall ensure proper conduct of its personnel in office premises, and enforce prohibition of consumption of alcoholic drinks / drugs, shewing of pan / Gutkha, smoking, using speakers for listening to music and loitering without any work. The workers should not be below the age of 18 years.
26. **Tools and Tackles:**
  - 26.1 The Agency shall provide all the tools and tackles attached at annexure C for the works including measuring instruments and safety gadgets for attending breakdown of equipment's. Cost of

transportation of labour and material to AIIMS, Bhubaneswar premises shall have to be borne by the Agency.

26.2 All tools & equipment shall be kept ready at site before taking over the site, failing which, AIIMS, Bhubaneswar shall impose penalty of Rs 1000/- per day.

**24. Uniform:** -The Agency/agency has to provide every year 02 sets of uniform (Pant & Shirt), 1 pair of safety shoe, Identity Card & Name Badge to each staff with approved colour by the Engineering-In-Charge within one month from the date of award of work, failing which, AIIMS, Bhubaneswar shall recover an amount of Rs 200/- per person per day till the compliance of the same from the Agency's running/final bill.

**25.** The monthly wages of the employee should be credited to their accounts in the first week i.e. within date of 7<sup>th</sup> every month. After credit, the transaction statement should be submitted to the office of EIC. Otherwise a penalty of Rs 1000/- per employee per day shall be debited from contractor's next RA bill.

**26. Maintenance of records:**

The Agency shall maintain all records such as log book, schedule of maintenance activity, complaint register, attendance register, stock register, material requisition book, gate pass and other statutory registers for manpower employed etc. such records are to be maintained as per the formats supplied by the department. Records of major breakdown occurred during the period shall be maintained showing the cause of the defect and location and type of repairs carried out. The cost of stationary required for maintenance of the above record are under the scope of Agency.

**27. Following documents/records to be maintained at site for substation, DG, UPS individually.**

1. Material Stock Register for SS-1 & SS-2, DG Set & UPS.
2. Monthly Roster Duty Chart of all Employees.
3. Material requisition and materials Issue Register
4. Complaint Register
5. Attendance Register.
6. Tools Register
7. DG & UPS Log book should be maintained by prescribed format as given by Engineering-In-Charge or representative.
8. Diesel Stock Register
9. Hand over & take over Register
10. HT, LT, & capacitor panel Meter Reading log book should be maintained by prescribed format as given by Engineering-In-Charge or, his representative.
11. Power Failure register
12. Preventive Maintenance Schedule Register
13. IR & ER Value Register
14. Shutdown Permit Register
15. Testing/Calibration Register
16. Visitor Register
17. External Light preventive maintenance register and lights stock register.

**28. Faults, Repairs and Replacement:**

28.1 In case of any fault for which necessary material is not available in the department stock or not in the scope of Agency, to avoid delay the Agency shall have to procure the material

as per the Engineering-In-charge. The payment for the same will be made as per the invoice submitted by the Agency in the subsequent RA bill.

- 28.2 In case of faults/repairs/damages, the Agency should immediately submit a detailed fault analysis report, citing details of repair/rectification schedule with details of probable completion to the EE(E). which will be executed after due approval of EIC.
- 28.3 On completion of replacement of spares before commission of the system, the replacement shall be physically checked and properly tested. These checks and tests shall be conducted by the agency under the supervision of AIIMS, Bhubaneswar and agency shall furnish the final test result.
- 28.4 Spare parts replaced during maintenance activity should be of OEM. Invoice of the replaced spare parts has to be deposited along with the RA bill.
- 28.5 **The minimum spare / Materials will be kept ready at site by the Agency within 15 days from the date of issue of work order otherwise suitable penalty shall be imposed as per direction of EIC.**
29. The maintenance and operation of work shall be done as per rules and specification of CPWD and as per I.E. Rules & Acts, amended up to date.
30. All T&P, Scaffolding ladders/Hydra, Electrical instruments/meters for maintenance, consumable and Contingent Articles required for execution of the work shall be arranged by the Agency.
31. Complaint register, attendance register, log book and other records will have to be produced either daily according to the requirement or when asked to do so by the Engineer-in-charge or his authorized representative.
32. When a register gets completed, it will be handed over the concerned J.E/A.E. It will not be returned to the Agency and the same will remain the property of the department.
33. All required registers will be certified by Engineer-in-Charge and Executive Engineer duly marked in chronological order but the Agency will have to arrange all such registers/stationery etc. Nothing extra shall be paid on this account.
34. Chases, holes & drilling works etc. shall be done using power operated tools in the cost of Contract. No extra will be paid for the same.
35. The Agency will maintain attendance records of the staff, which will be checked by the Junior Engineer/Assistant Engineer/ Engineer-in-charge. In case of absence of any staff, recovery shall made at the following rates: -
  - (a) **High Skilled labour @ Rs.1,500/- per day per person.**
  - (b) **Skilled labour @ Rs.1,200/- per day per person.**
  - (c) **Un-skilled labour @ Rs.1,000/- per day per person**
36. The Agency and/ or his authorized agent should see the site order book every day and get the compliance of instruction given by the JE/AE/Engineer-in-charge as per time scheduled.
37. The agency shall provide operations with required manpower as for schedule of quantity for Online UPS, and DG SETs at different location in AIIMS Campus. The CMC shall be provided by OEM agency.

**Annexure-7****MANPOWER DETAILS**

1. The maintenance of work shall be done as per rules and specification of CPWD and as per I.E. Rules & Acts, amended up to date.
2. Contract shall employ following suitable qualified / experienced technical staff as under for operation & maintenance for the works as above on all days including Sunday and all types of Holiday: -

| <b>A. SUBSTATION-I &amp; II and DG SETS</b> |                                |                           |                              |
|---------------------------------------------|--------------------------------|---------------------------|------------------------------|
| <b>Sl. No.</b>                              | <b>Categories</b>              | <b>number of manpower</b> | <b>Shift</b>                 |
| 1                                           | Shift In charge (High Skilled) | 1                         | Morning shift                |
|                                             |                                | 1                         | Evening shift                |
|                                             |                                | 1                         | Night Shift                  |
| 2                                           | Skilled                        | 4                         | Morning shift                |
|                                             |                                | 4                         | Evening shift                |
|                                             |                                | 4                         | Night Shift                  |
|                                             |                                | 2                         | week reliever                |
| 3                                           | Skilled                        | 1                         | General shift (DG operation) |

| <b>B. ONLINE UPS</b> |                   |                           |               |
|----------------------|-------------------|---------------------------|---------------|
| <b>Sl. No.</b>       | <b>Categories</b> | <b>number of manpower</b> | <b>Shift</b>  |
| 1                    | Highly skilled    | 1                         | Morning shift |
|                      |                   | 1                         | Evening shift |
|                      |                   | 1                         | Night Shift   |
| 2                    | Skilled           | 1                         | Morning shift |
|                      |                   | 1                         | Evening shift |
|                      |                   | 1                         | Night Shift   |
|                      |                   | 1                         | week reliever |

| <b>C. External Light</b> |                   |                           |               |
|--------------------------|-------------------|---------------------------|---------------|
| <b>Sl. No.</b>           | <b>Categories</b> | <b>number of manpower</b> | <b>Shift</b>  |
| 1                        | Skilled           | 1                         | General shift |
| 2                        | Unskilled:        | 1                         | General shift |

**\*NOTE - Shift Timing: -**

| <b>Sl. No.</b> | <b>Shift</b>  | <b>Time</b>         |
|----------------|---------------|---------------------|
| 1              | Morning shift | 06:00 AM to 2:00 PM |
| 2              | Evening shift | 2:00 PM to 10:00 PM |
| 3              | Night Shift   | 10:00 PM to 6:00 AM |
| 4              | General shift | 09:30 AM to 5:30 PM |

**3. QUALIFICATION OF MANPOWER:**

| Sl. No. | Categories                    | Qualification with Experience                                                                                                                                                                                                                                                     |
|---------|-------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1       | Shift In charge(High Skilled) | Degree in Electrical with 2 years' experience or Diploma in Electrical with 5 years' experience or ITI in electrical with 8 years' experience in Operation & Maintenance of electrical substations with MV/ Wireman competency license from any state govt. Electrical Inspector. |
| 2       | Highly skilled                | Diploma in Electrical with 3 years' experience or ITI in electrical with 5 years experience in Operation & Maintenance of electrical substations with MV/ Wireman competency license from any state govt. Electrical Inspector.                                                   |
| 3       | Skilled                       | Diploma in Electrical / Mechanical with 2 years' experience or ITI in electrical / mechanical with 3 years' experience in Operation & Maintenance of electrical substation, with MV/ Wireman competency license from any state govt. Electrical Inspector.                        |
| 4       | Unskilled                     | 10 <sup>th</sup> class / standard equivalent 3 years practical experience in electrical field.                                                                                                                                                                                    |

4. The agency shall submit the Biodata of manpower along with the required certificate as per **para (3)** within 7 days from the issue of letter of acceptance & after due evaluation by the EIC /EE(EL) the eligible manpower shall be selected.

## Financial Bid

**Name of Work: - "Operation and Comprehensive Annual Maintenance Contract of 33/0.433 KV Substation (I & II) and External Light with Operation Services of DG Set & UPS at Hospital Campus AIIMS, Bhubaneswar.**

**NIT No: AIIMS/BBSR/ENGG/ELECT/20/2023**

| Sr. No | Description of Item                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |               | Qty. | Unit | Period Covers | Rate per QTY                               | Amount (in Rs.)             |
|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|------|------|---------------|--------------------------------------------|-----------------------------|
|        | <b>Part – A: Comprehensive Electrical Maintenance</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                        |               |      |      |               |                                            |                             |
| 1      | Comprehensive Maintenance of all equipment attached at <b>Annexure-A</b> around the year twenty-four hours in three-shift/day including holidays with spares and consumable materials along with sufficient Tools and Tackles attached at <b>Annexure – C</b> . The day-to-day maintenance/periodical /Breaker down Maintenance/Corrective maintenance of the substations and external light shall be carried out as per the scope of work and maintenance schedule attached at <b>Annexures 2 &amp; B</b> . | 1 Job         | 1    | Job  | 24 Months     | ₹<br>8,53,614.46                           | ₹ 2,04,86,747.00            |
|        | Part – A, Comprehensive Electrical Maintenance Total Amount including GST(in Rs.)                                                                                                                                                                                                                                                                                                                                                                                                                            |               |      |      |               |                                            | ₹ 2,04,86,747.00            |
| Sr. No | Description of Item                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | No. of Person | Qty  | Unit | Period Cover  | Total Wages each month Per Person (in Rs.) | Total Annual wages (in Rs.) |
|        | <b>Part – B: Manpower</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |               |      |      |               |                                            |                             |
| 1      | <b>EXTERNAL LIGHT</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |               |      |      |               |                                            |                             |
|        | Providing operation services of all equipment of external light round the year complete with required skilled/ licensed (wherever applicable) and supervisor/ engineer and including tools and tackles and training etc. as required. (in all day i/c holidays complete as required) as per qualification attached in Annexure 7 & List of equipment's attached at Sl. No. 7 under Annexure A                                                                                                                |               |      |      |               |                                            |                             |
| i      | Skilled                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 1             | 1    | no.  | 24 Months     | 28,018.00                                  | 6,72,432.00                 |
| ii     | Un-Skilled                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 1             | 1    | no.  | 24 Months     | 21,735.00                                  | 5,21,640.00                 |
| 2      | <b>ONLINE - UPS</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |               |      |      |               |                                            |                             |

|                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                         |    |           |     |           |           |                       |
|---------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|-----------|-----|-----------|-----------|-----------------------|
|                                       | Providing operation services of all equipment of Online UPS round the year 24 hours in three shifts/day complete with required skilled/ licensed (wherever applicable) and supervisor/ engineer and including tools and tackles and training etc. as required. (in all day i/c holidays complete as required) as per qualification attached in Annexure 7 & List of equipment's and location attached at Sl. No. 1 under Annexure 4                     |    |           |     |           |           |                       |
| i                                     | Highly skilled                                                                                                                                                                                                                                                                                                                                                                                                                                          | 3  | 3         | no. | 24 Months | 29,670.00 | 21,36,240.00          |
| ii                                    | Skilled                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 4  | 4         | no. | 24 Months | 28,018.00 | 26,89,728.00          |
| 3                                     | SUB STATION (I & II) & DG SETS                                                                                                                                                                                                                                                                                                                                                                                                                          |    |           |     |           |           |                       |
|                                       | Providing operation services of all equipment of SUB STATION (I & II) & DG SETS round the year 24 hours in three shifts/day complete with required skilled/ licensed (wherever applicable) and supervisor/ engineer and including tools and tackles and training etc. as required. (in all day i/c holidays complete as required) as per qualification attached in Annexure 7 & List of equipment's attached at Annexure-A & Sl. No. 2 under Annexure-4 |    |           |     |           |           |                       |
| i                                     | Shift In-charge (Highly Skilled)                                                                                                                                                                                                                                                                                                                                                                                                                        | 3  | 3         | no. | 24 Months | 29,670.00 | 21,36,240.00          |
| ii                                    | Skilled                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 15 | 15        | no. | 24 Months | 28,018.00 | 1,00,86,480.00        |
| <b>Manpower Total (including GST)</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                         |    | <b>27</b> |     |           |           | <b>1,82,42,760.00</b> |

**PERFORMA FOR QUOTING RATES**

|                                                                                                                                                                                                                            |                         |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|
| <b>Name of Work:- Operation and Comprehensive Annual Maintenance Contract of 33/0.433 KV Substation (I &amp; II) and External Light with Operation Services of DG Set &amp; UPS at Hospital Campus AIIMS, Bhubaneswar.</b> |                         |
| <b>e-NIT No: AIIMS/BBSR/ENGG/ELECT/20/2023</b>                                                                                                                                                                             |                         |
| <b>Estimate Cost put to tender :- ₹ 3,87,29,507.00</b>                                                                                                                                                                     |                         |
| Name of Contactor -                                                                                                                                                                                                        |                         |
|                                                                                                                                                                                                                            |                         |
| Manpower & Material Component (Part A & B)                                                                                                                                                                                 |                         |
| Total Amount (Material Component Part – A including of GST ) in Rs.                                                                                                                                                        | <b>₹ 2,04,86,747.00</b> |
| Service Charge Percentage at par/above the Total Estimated labour Component Cost                                                                                                                                           |                         |
| % in words                                                                                                                                                                                                                 |                         |
| Total Amount (Rs.)                                                                                                                                                                                                         |                         |
| Manpower Component (Part – B Total Amount (including of GST) in Rs.                                                                                                                                                        | <b>₹1,82,42,760.00</b>  |
| Percentage above/below the total estimated cost                                                                                                                                                                            |                         |
| % in words                                                                                                                                                                                                                 |                         |
| Total Amount (Rs.)                                                                                                                                                                                                         |                         |
| Total Amount (Part- A + Part – B including of GST ) Rs.                                                                                                                                                                    |                         |
| Percentage above/below                                                                                                                                                                                                     |                         |

(Rupees \_\_\_\_\_ only)

**Note: -**

- 'L-1' shall be decided on composite basis of total amount of Part 'A' & 'B'.(i.e. reflect in BOQ3). Lowest bidder of BOQ3 (i.e. addition of rate quoted in BOQ1 & BOQ2)shall be considered as L1 of the total work.***
- MR = To be read as Market Rate.**
- The Bidder must submit Financial Bid in On-Line Mode.
- I/We have gone through the terms & conditions as stipulated in the tender and confirm to accept and abide the same.
- No other charges would be payable by the Institute
- Quantity mentioned above is tentative, it may increase or decrease as per site requirement.
- Agency has to bring samples as per above preferred brands only and Engineer-In-Charge shall approve one sample out of the samples brought by the Agency. The Agency has to use material of that approved sample only. No claim in this regard shall be entertained.
- In case of non-availability of material of approved make, prior approval from Engineer-In-Charge shall be obtained for another make.
- Before deputing the required man power recommended C.V. should be submitted & approved by E.I.C for consideration.
- The quoted should be inclusive of GST as applicable.
- The rate quoted by the contractor for the manpower component should be as per the payment of minimum wages act of Central Govt. the bid will be not considered if the contractor's quoted price for manpower is less than the rates as per the minimum wages category mentioned by the Ministry of Labour, Govt. of India.

I, the contractor certify that I am filling this template after understanding all the items of schedule of Quantity of e-NIT page no.-----

Name : \_\_\_\_\_

Business Address: \_\_\_\_\_

Signature of the Bidder: -

Date : \_\_\_\_\_

Place : Bhubaneswar

Seal of the Bidder \_\_\_\_\_

**E-TENDERING INSTRUCTIONS TO BIDDERS**

**General.** The Special Instructions (for e-Tendering) supplement 'Instruction to Bidders', as given in this Tender Document. Submission of Online Bids is mandatory for this Tender. E-Tendering is a new methodology for conducting Public Procurement in a transparent and secured manner. Suppliers / Vendors will be the biggest beneficiaries of this new system of procurement. For conducting electronic tendering, AIIMS BHUBANESWAR has decided to use the portal <http://eprocure.gov.in/AIIMSBBBSR> website.

**Instructions.**

1. **Tender Bidding Methodology.** Two Stage Online Bidding.
2. **Broad outline of activities from Bidders prospective:**
  - (a) Procure a Class III Digital Signature Certificate (DSC).
  - (b) Register on the e-Procurement portal <http://eprocure.gov.in/AIIMSBBBSR> website.
  - (c) Create Users on the above portal.
  - (d) View Notice Inviting Tender (NIT) on the above portal.
  - (e) Download Official Copy of Tender Documents from the above portal.
  - (f) Seek Clarification to Tender Documents on the above portal. View response to queries of bidders, posted as addendum, by AIIMS, Bhubaneswar.
  - (g) Bid-Submission on the above portal.
  - (h) Attend Public Online Tender Opening Event (TOE) on the above portal - Opening of Technical Part.
  - (j) Post-TOE Clarification on the above portal (Optional) – Respond to AIIMS, Bhubaneswar's Post-TOE queries.
  - (k) Attend Public Online Tender Opening Event (TOE) on the above portal - Opening of Financial Part (Only for Technical Responsive Bidders).

*For participating in this tender online, the following instructions are to be read carefully. These instructions are supplemented with more detailed guidelines on the relevant screens of the above portal.*

3. **Digital Certificates.** For integrity of data and authenticity / non-repudiation of electronic records, and to be complaint with IT Act 2000, it is necessary for each user to have a Digital Certificate (DC), also referred to as Digital Signature Certificate (DSC), of Class III, issued by a Certifying Authority (CA) licensed by Controller of Certifying Authorities (CCA) [refer <http://www.cca.gov.in>].

4. **Registration.** To use the Electronic Tender portal <http://eprocure.gov.in/AIIMSBBBSR> website, vendors need to register on the portal. Registration of each organization is to be done by one of its senior persons vis-à-vis Authorized Signatory who will be the main person coordinating for the e-tendering activities. In the above portal terminology, this person will be referred to as the Super User (SU) of that organization. For further details, please visit the website/portal, and follow further instructions as given on the site. Pay Annual Registration Fee as applicable.

**Note.** : After successful submission of Registration details and Annual Registration Fee, please contact to the Helpdesk of the portal to get your registration accepted/ activated.

- (a) The Bidder must ensure that after following above, the status of bid submission must become - "Submitted".
- (b) Please take due care while scanning the documents so that the size of documents to be uploaded remains minimum. If required, documents may be scanned at lower resolutions say at 150 dpi. However, it shall be sole responsibility of bidder that the uploaded documents remain legible.
- (c) It is advised that all the documents to be submitted are kept scanned or converted to PDF format in a separate folder on your computer before starting online submission.
- (d) The Financial part/BOQ may be downloaded and rates may be filled appropriately. This file may also be saved in a folder on your computer. Please don't change the file names & total size of documents (Preferably below 5 MB per document) may be checked.

**5. Bid submission.** The entire bid-submission would be online on the Tender wizard portal i.e. <https://eprocure.gov.in/AIIMS>, Bhubaneswar.

**6. Broad outline of submissions are as follows: -**

- (a) Submission of Bid Parts (Technical & Financial).
- (b) Submission of information pertaining to Bid Security/ EMD.
- (c) Submission of signed copy of Tender Documents/Addendums.

7. The TECHNICAL PART shall consist of Electronic Form of Technical Main Bid and Bid Annexure. Scanned/Electronic copies of the various documents to be submitted under the Eligibility Conditions, offline submissions, instructions to bidders and documents required establishing compliance to Technical Specifications and Other Terms & Conditions of the tender are to be uploaded.

8. The FINANCIAL PART shall consist of Electronic Form of Financial Main Bid and Financial Bid Annexure, if any. Scanned copy of duly filled price schedule (Section VII) for both packages are to be uploaded. If required, additional documents in support of taxes, quoted duties etc may also be uploaded.

**9. Tender Processing Fee. As per applicable.**

**10. Public Online Tender Opening Event (TOE).** The e-Procurement portal offers a unique facility for 'Public Online Tender Opening Event (TOE). Tender Opening Officers as well as authorized representatives of bidders can attend the Public Online Tender Opening Event (TOE) from the comfort of their offices. For this purpose, representatives of bidders (i.e. Supplier organization) duly authorized. Every legal requirement for a transparent and secure 'Public Online Tender Opening Event (TOE)' has been implemented on the portal. As soon as a Bid is decrypted, the salient points of the Bids are simultaneously made available for downloading by all participating bidders. The medium of taking notes during a manual 'Tender Opening Event' is therefore replaced with this superior and convenient form of 'Public Online Tender Opening Event (TOE)'. The portal a unique facility of 'Online Comparison Statement' which is dynamically updated as each online bid is opened. The format of the Statement is based on inputs provided by the Buyer for each Tender. The information in the Comparison Statement is based on the data submitted by the Bidders. A detailed Technical and / or Financial Comparison Statement enhance Transparency. Detailed instructions are given on relevant screens. The portal has a unique facility of a detailed report titled 'Online Tender Opening Event (TOE)' covering all important activities of 'Online Tender Opening Event (TOE)'. This is available to all participating bidders for 'Viewing/Downloading'. There are many more facilities and features on the portal. For a particular tender, the screens viewed by a Supplier will depend upon the options selected by the concerned Buyer.

**Important Note.** *In case of internet related problem at a bidder's end, especially during 'critical events' such as – a short period before bid-submission deadline, during online public tender opening*

event it is the bidder's responsibility to have backup internet connections. In case there is a problem at the e-procurement / e-auction service-provider's end (in the server, leased line, etc) due to which all the bidders face a problem during critical events, and this is brought to the notice of AIIMSBBBSR by the bidders in time, then AIIMS, Bhubaneswar will promptly reschedule the affected event(s).

**9. Other Instructions.** For further instructions, the vendor should visit the home-page of the portal. The complete help manual is available in the portal for Users intending to Register / First-Time Users, Logged-in users of Supplier organizations. Various links are also provided in the home page.

**Important Note.** : It is strongly recommended that all authorized users of Supplier organizations should thoroughly peruse the information provided under the relevant links, and take appropriate action. This will prevent hiccups and minimize teething problems during the use of the said portal.

***The following 'FOUR KEY INSTRUCTIONS for BIDDERS' must be assiduously adhered to :-***

1. Obtain individual Digital Signature Certificate (DSC) well in advance of your first tender submission deadline on the portal.
2. Register your organization on the portal well in advance of your first tender submission deadline on the portal
3. Get your organization's concerned executives trained on the portal well in advance of your first tender submission deadline on the portal
4. Submit your bids well in advance of tender submission deadline on the portal (There could be last minute problems due to internet timeout, breakdown etc.)
5. While the first three instructions mentioned above are especially relevant to first-time users on the portal, the fourth instruction is relevant at all times. Minimum Requirements at Bidders end Computer System with good configuration (Min P IV, 1 GB RAM, Windows XP) Broadband connectivity. Microsoft Internet Explorer 8.0 or above. Digital Certificate(s) Vendors Training Program Necessary training to each and every registered bidder under this portal shall be impacted by the ASP, M/s. ITI, Bhubaneswar, if required, before participation in the online tendering.
6. For any further Assistance <http://eprocure.gov.in/AIIMSBBBSR> website for E-tendering queries contact representative NIC helpdesk.