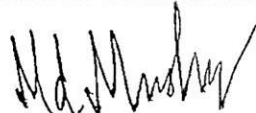


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			<b>Date</b>	<b>11/09/2020</b>


## GENERAL TECHNICAL SPECIFICATIONS

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PREPARED BY	APPROVED BY

 <b>BHEL-EMRP</b> <b>MUMBAI</b>	<b>TECHNICAL SPECIFICATION PART-I</b> <b>FOR</b> <b>MECHANICAL WORKSHOP</b>		<b>SPECIFICATION NO.</b> <b>EM-VYASI-MWS-GTS-00</b>
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### SECTION 1 – SCOPE OF ENQUIRY

1. This Specification covers the design, manufacture, inspection and testing at vendors work, if required, proper packing and delivery to site of ELECTRICAL WORKSHOP EQUIPMENTS as mentioned in different sections of this specification for 2 X 60 MW VYASI HEP
2. It is not intent to specify herein all the details of design and manufacture. However the equipment shall conform in all respect to high standards of design engineering and workmanship and shall be capable of performing in continuous commercial operation up to vendors guarantee.
3. The general terms and conditions, instructions to tender and other attachment referred to elsewhere be hereby made part of the tender specification.
4. The tenderer shall be responsible for and governed by all requirements stipulated herein after.
5. Deviation, if any should be brought out very clearly on deviation sheet Annex-II. Otherwise it would be presumed that the tender offer is in line with what has been stated/asked for in this specification.
6. The offer should be complete with technical data, catalogue, brochures and drawings, as applicable.
7. The bid shall be in English language and MKS system of unit.

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## SECTION 2 – GENERAL CONDITIONS

### 1. SCOPE OF SUPPLY

The scope of supply shall be as per enquiry along with all essential accessories required for the successful operation of the equipment.

### 2. CODES AND STANDARDS


All relevant National and International standards shall be specified and followed.

### 3. DESIGN CRITERIA

- 3.a. Electrical Workshop Equipment shall be used for testing various electrical equipment/ devices during Commissioning, Operation and Maintenance of plant.
- 3.b. The equipment will be kept in a clean but hot, humid and tropical atmosphere when not in use. Equipment will be placed in dust laden, hot, humid atmosphere during its use.
- 3.c. For continuous operation at specified rating, temperature rise of various equipment/ components shall be limited to the permissible value stipulated in the relevant standards and this specification.
- 3.d. The equipment and component thereof shall be capable of withstanding the mechanical forces and thermal stresses of the short circuit current without any damage and deterioration of material.


### 4. SPECIFIC REQUIREMENTS & RATINGS

- 4.a. The bidder may note that the equipment ranges, ratings, quantities as detailed herein, are the minimum requirement only. The equipment shall be furnished in strict accordance with the same. All accessories for the equipment not covered here, but are necessary for satisfactory and trouble free operation of the equipment, shall be supplied by the Bidder. Bidder may also quote for optional accessories.
- 4.b. The instrument shall be designed suitably for satisfactory operation and storage in wide range of temperature variations prevailing at projects sites.
- 4.c. Analog instruments shall be provided with knife-edge pointer and anti-parallax mirror.
- 4.d. Instrument/meters suitable for DC supply should be provided with re-chargeable batteries, charger and low battery charge indication.
- 4.e. The portable instruments shall be suitable for hand held operation, rugged in construction and suitable for field use.
- 4.f. Power supply for AC operation Instrument shall be 415/240 V AC, 50 Hz.

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- 4.g. All electrical instruments shall be dust and moisture proof.
- 4.h. Calibration tests shall be done on all instruments, wherever applicable and calibration certificates are to be furnished with instruments.
- 4.i. Equipments shall be of shock proof.
- 4.j. Instruments shall meet National or International relevant safety standards.
- 4.k. **Manufacturers name plate:**  
The following data shall be shown in accordance with the relevant standard
  - Manufacturers name and address
  - Works serial number and date of manufacture
  - Main technical data
- 4.l. **Warning Plates:**  
Warning plates / caution for the safety of instrument & human beings with Dos and Don'ts to be inscribed on the instruments / Recorders / all electrical equipment in English.
- 5. TESTING & INSPECTION**
- 5.a. The QAP shall be finally approved by BHEL /customer and the same shall be applicable for testing & inspection requirement, without any cost implication.
- 5.b. The manufacturer shall carry out all acceptance and routine tests as per relevant standards and specification in line with BHEL /customer approved QAP. Charges for all these routine and acceptance tests for all the equipments shall deem to be included in the bid price. Additional Charges shall not be applicable/paid in lieu of QAP Approval at later stage.
- 5.c. Equipment shall be completely assembled, wired, adjusted and tested in factory as per the latest edition of relevant standards.
- 5.d. The Bidder shall submit the Test Certificates/Reports for all the acceptance and routine tests as per relevant standards, specifications and in line with QAP for BHEL /customer approval. Based on approved Test Certificates/ Reports, the customer will issue the Material Dispatch Clearance Certificates (MDCCs). Only after receipt of MDCC, vendor can dispatch the material.
- 5.e. Bidder shall also submit the Test Certificates for all the acceptance and routine tests as per relevant standards, specifications along with the equipment as per TABLE-2.



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**6. DOCUMENTATION**

**6.a. To be submitted with bid:**

The Bidder shall submit all documents as per TABLE-1, along with the bid.

The Bidder shall ensure that the all-necessary information required to fully describe the equipment are submitted with the bid.

**6.b. To be submitted after award of order:**

The Bidder shall submit all documents as per TABLE-2.

After award of contract for BHEL and/ or end customer approval and also along with equipment.

**7. DELIVERY**

The delivery of Equipment shall be completed as per NIT (Notice Inviting Tender)

**8. While quoting Bidder shall have to furnish unit rate for each item. Purchaser reserves the rights to add/delete quantity of any item during detailed engineering as finally required for the project. Unit rate quoted shall be applicable for price adjustment in such cases.**

**9. All the equipment shall be procured from reputed manufacturers and make of equipment shall be subjected to the approval of BHEL/ BHEL's Customer.**

**10. DEMONSTRATION & HANDING OVER TO BHEL / CUSTOMER**


The bidder shall be responsible for demonstration of the supplied equipment at site to BHEL / BHEL's customer and ensure handing over the same to the satisfaction of BHEL / BHEL's customer.

**11. PERFORMANCE GUARANTEE<sup>o</sup>**

The bidder shall guarantee that the equipment offered shall meet the requirement as stipulated in this specification. In case the performance of equipment is not as per performance guarantee, the bidder will have to replace the equipment at site free of cost.

**12. DEVIATION**

The Bidder shall indicate the deviation, if any, in Schedule of Technical Deviation as per Annexure - II, along with the justification for the deviation.

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### 13. PACKAGE & CONSIGNMENT DATA

The Bidder shall pack all the equipment, their accessories and spares in road -worthy package. Bidder to indicate the number of packages of consignment together with the size (L x W x H) and weight for transporting the equipment along with their bid.

Each package shall be legibly marked with the following information:

#### 1. Tools and plant for (2 X 60 MW) VYASI HEP

BHEL Purchase Order No:

Supplier's Name:


Manufacturer's Name:

Name of the Equipment:

Item Code of the equipment:

Quantity:

Weight:

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**Table-1**

**LIST OF DOCUMENTS TO BE SUBMITTED ALONG WITH BID:**


Sl.No	Documents	No of copies
1	Details of Equipments as per Specific technical Specifications (Duly Filled)	2 copies
2	Product Catalogue for all equipments/ instruments referred in Specific technical Specifications	2 copies
3	Schedule of Deviation as per Annexure - II	2 copies

**NOTE:** All above documents to be submitted strictly, failing which the offer may likely be rejected.

**Table-2**

**LIST OF DOCUMENTS TO BE SUBMITTED AFTER AWARD OF ORDER FOR BHEL / END CUSTOMER APPROVAL & ALONG WITH EQUIPMENT:**

Sl.No	Documents	No of copies
1	Product catalog with complete specifications, model nos. physical dimensions etc.	3 copies (2 for customer + 1 for BHEL)
2	Quality Assurance Plan along with test certificates and calibration certificates for MDCCs	4 copies (3 for customer + 1 for BHEL)
2	Test Certificates of all acceptance and routine tests as applicable.	3 copies (2 for customer + 1 for BHEL)
3	Calibration certificates as applicable.	3 copies (2 for customer + 1 for BHEL)
4	Guarantee certificate as per NIT.	2 copies (1 for customer + 1 for BHEL)
5	Instruction manual of individual equipment Instruction manual of individual equipment shall clearly indicate in English the installation and connection method. Operating, Maintenance and Calibration methods shall be provided in the manual.	7 copies (6 for customer + 1 for BHEL)

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Annexure – II


**Schedule of Technical Deviation**

Sr No.	Item	Deviation	Justification for Deviation

Use extra sheet if required.

**Note:** Bidder has to indicate clearly the deviations if any w.r.t. specification. Bidder has to indicate all the deviations on this annexure – II only, deviations mentioned elsewhere in Bidder's offer will not be considered.



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#### Spare Parts III-A

Following spare items shall be supplied along with items (as applicable)

Sl No	Description	Quantity
1	Indicating Lamp (each used type)	2 Nos
2	Fuses (each used type)	5 Nos
3	Plugs and Sockets (each used type)	4 Nos
4	Belts (each used type)	5 Nos