


 <b>BHEL-EMRP</b> <b>MUMBAI</b>	<b>TECHNICAL SPECIFICATION FOR MECHANICAL WORKSHOP ITEMS</b>	<b>SPECIFICATION NO. EM-NHPC-KSN-MWS-24</b>	
		<b>Rev. No</b>	<b>00</b>
	<b>330 MW KISHANGANGA HEP</b>	<b>Rev Date</b>	<b>03/09/2014</b>

### SECTION 1 – SCOPE OF ENQUIRY

1. This Specification covers the design, manufacture, inspection and testing at vendors work, proper packing and delivery as per NIT for MECHANICAL WORKSHOP EQUIPMENTS of :  
330 MW KISHANGANGA 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 (ANNEXURE-V) of the specification. 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.

 Vimlanshu Prawal Horo Engineer	 Mandvi Gupta Manager
PREPARED BY	CHECKED & APPROVED BY

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	<b>330 MW KISHANGANGA HEP</b>	<b>Rev Date</b>	<b>03/09/2014</b>

## SECTION 2 – GENERAL CONDITIONS

### 1. SCOPE OF SUPPLY

The scope of supply indicating technical specification & Bill of quantity shall be as per Annexure –I (Details of Equipment's) along with all essential accessories required for the successful operation of the equipment's.

### 2. CODES AND STANDARDS


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

### 3. DESIGN CRITERIA


- 3.a. Mechanical 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:  
KISHANGANGA HEP: (-) 14°C to 24°C.
- 4.c. The portable instruments shall be suitable for hand held operation, rugged in construction and suitable for field use.
- 4.d. Power supply for AC operation Instrument shall be 240 V AC, 50 Hz single phase.

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	<b>330 MW KISHANGANGA HEP</b>	<b>Rev Date</b>	<b>03/09/2014</b>

- 4.e. All mechanical instruments shall be dust and moisture proof.
- 4.f. Calibration tests shall be done on all instruments, wherever applicable and calibration certificates are to be furnished with instruments.
- 4.g. Equipments shall be of shock proof.
- 4.h. Instruments shall meet National or International relevant safety standards.
- 4.i. 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.j. 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. Erection & Commissioning**  
Erection & Commissioning of supplied item is in vendor's scope, at site.
- 6. Testing & Inspection**
- 6.a The manufacturer shall carry out all acceptance and routine tests as per relevant standards and specification in line with BHEL specifications . Charges for all these routine and acceptance tests for all the equipment shall deem to be included in the bid price.
- 6.b Equipment shall be completely assembled, wired, adjusted and tested in factory as per the latest edition of relevant standards.
- 6.c The Bidder shall submit the Test Certificates/Reports for all the acceptance and routine tests as per relevant standards, specifications and in line BHEL approval. Based on approved Test Certificates/ Reports, the BHEL will give the dispatch clearance. Only after Clearance vendor can dispatch the material.
- 6.d 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, Annexure - II.

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		<b>Rev. No</b>	<b>00</b>
	<b>330 MW KISHANGANGA HEP</b>	<b>Rev Date</b>	<b>03/09/2014</b>

**7. Documentation**

7.a To be submitted with bid:

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

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

7.b To be submitted after award of order:

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

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

**8. Delivery**

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

9. 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.

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

**11. Performance Guarantee**


The bidder shall guarantee that the equipment offered shall meet the requirement as stipulated in this specification and as confirmed by them in annexure - III, (Duly filled in). 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 - V, along with the justification for the deviation. Deviations mentioned anywhere else shall not be entertained.

**13. Package & Consignment Data**

The Bidder shall pack suitably all the equipment, their accessories and spares in road -worthy package to avoid in-transit damage. 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.

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		<b>Rev. No</b>	<b>00</b>
	<b>330 MW KISHANGANGA HEP</b>	<b>Rev Date</b>	<b>03/09/2014</b>

Each package shall be legibly marked with the following information:

**Applicable for KISHANGANGA HEP Project:**

MECHANICAL WORKSHOP EQUIPEMENTS for 330 MW

**KISHANGANGA HEP**

BHEL Purchase Order No:

Job No: 9876-12


Supplier's Name:

Manufacturer's Name:

Name of the Equipment:

Quantity:

Weight:

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	<b>330 MW KISHANGANGA HEP</b>	Rev. No	00
		Rev Date	03/09/2014

**Annexure – I**


**Details of Equipments**

**Bidder must quote the material code number, material description & quantity offered in their quotation /bid, as specified below. Bidder's alternate description can also be given in separate column.**


**Completeness of Equipment**

Each of the equipment listed shall be complete with applicable accessories like power supply main leads, screened guard leads, screened line test leads, earth leads, connectors and clips, leather carrying case, fastners/washers/nuts/anchoring bolts/etc required for erection and commisioning and any other accessories required for completing the equipment.

Sl.No	Item specification	Qty	Details of Equipment offered by the Bidder	
			Make & Model No	Catalogue No
1	<p><b>Long lathe</b></p> <p>Gap bed, all geared, heavy duty type Centre lathe with one(1) set coolant pump complete with coolant tank &amp; swarf tray</p> <p>ABC = 2000 mm (min) Swing over bed = 500 mm (min) +</p> <p><b>Special Accessories:</b></p> <ul style="list-style-type: none"> <li>• Taper turning attachment 1 set,</li> <li>• Steady and follower rest,</li> <li>• Three jaw self centering chuck-1No.</li> <li>• Four jaw independent chuck 1 No,</li> <li>• Dead and live centre 2 Nos,</li> <li>• Drive dogs 2 Nos.</li> <li>• Driving plate-2 No.</li> <li>• Face plates-2 No.</li> <li>• Change wheels (for metric threads),</li> <li>• Quick change tool,</li> <li>• Machine lamp (work light)-1 No.</li> <li>• Hardened jaw reversible for internal and external chucking 1 set.</li> <li>• Set post 1 set.</li> <li>• HSS tool bits with tool base 4 set.</li> <li>• High carbon tool bits with tool base 4</li> </ul>	1 No	<b>HMT/ BATLIBOI/ ATLAS/ NAGMATI</b>	

 <b>BHEL-EMRP</b> <b>MUMBAI</b>	<b>TECHNICAL SPECIFICATION  FOR  MECHANICAL WORKSHOP ITEMS</b>	<b>SPECIFICATION NO.  EM-NHPC-KSN-MWS-24</b>	
		<b>Rev. No</b>	<b>00</b>
<b>330 MW KISHANGANGA HEP</b>		<b>Rev Date</b>	<b>03/09/2014</b>

	set. <ul style="list-style-type: none"> <li>• Turning tools kit 4 set.</li> <li>• Parting tools 4 set.</li> <li>• External threading tool (with corresponding inserts)</li> <li>• Lube oil for gear box, 2 drum,</li> <li>• Revolving centre &amp; rear tool post, Accessories 1 set.</li> </ul> + <b>Spare Parts as per Annexure IV</b>			
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		<b>Rev. No</b>	<b>00</b>
		<b>Rev Date</b>	<b>03/09/2014</b>

**Annexure -II**

**Table 1**

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


<b>Sl.No</b>	<b>Documents</b>	<b>No of copies</b>
<b>1</b>	Annexure – I Details of Equipments (Duly Filled)	2 copies
<b>2</b>	Product Catalogue for all equipments/ instruments referred in Annexure – I	2 copies
<b>3</b>	Deviation Statement (Technical) (Annexure – V)	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 and ALONG WITH EQUIPMENT**

<b>Sl.No</b>	<b>Documents</b>	<b>No of copies</b>
<b>1</b>	Product catalog with complete specifications, model nos. physical dimensions etc.	3 copies (2 for NHPC + 1 for BHEL)
<b>2</b>	Test Certificates of all acceptance and routine tests as applicable.	3 copies (2 for NHPC + 1 for BHEL)
<b>3</b>	Calibration certificates as applicable.	3 copies (2 for NHPC + 1 for BHEL)
<b>4</b>	Guarantee certificate valid for 12 months from the date of delivery.	2 copies (1 for NHPC + 1 for BHEL)
<b>5</b>	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 NHPC + 1 for BHEL)
<b>6</b>	OGA diagram, Line diagram, Foundation diagram, any relevant document/diagram, necessary for Erection and commissioning at site	7 copies (6 for NHPC + 1 for BHEL)


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		<b>Rev. No</b>	<b>00</b>
	<b>330 MW KISHANGANGA HEP</b>	<b>Rev Date</b>	<b>03/09/2014</b>

Annexure -III

**SCHEDULE OF GUARANTEED TECHNICAL PARTICULAR**

**(Bids are liable to be rejected if the bidder dose not furnished the technical data**

SL.NO	Description	To be filled by the Bidders
	<b>1.0 Long Lathe</b>	
1.	Name of manufacturer	
2.	Type ,Model	
3.	Standard to which conforms.	
4.	Distance between centre	
5.	Length of the bed	
6.	Width of Bed	
7.	Height of Spindle	
8.	Swing over bed	
9.	Swing over Gap	
10.	Width of Gap	
11.	Type of cooling	
12.	Main motor rating & Type	
13.	Class of insulation of motor	
14.	Overall Dimension	
15.	Gross Weight	

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		<b>Rev. No</b>	<b>00</b>
	<b>330 MW KISHANGANGA HEP</b>	<b>Rev Date</b>	<b>03/09/2014</b>

Annexure - IV

**LIST OF SPARES TO BE SUPPLIED ALONG WITH ITEMS WHEREVER APPLICABLE**

<b>SL. NO.</b>	<b>DESCRIPTION</b>	<b>QUANTITY</b>
1	Indicating Lamps	2 nos of each used type
2	Fuses	5 nos of each used type
3	Plugs and Sockets	4 nos of each used type
4	Belts	5 nos of each used type

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		Rev. No	00
		Rev Date	03/09/2014

Annexure - V

**Deviation Statement (Technical)**

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 - III only, deviations mentioned elsewhere in Bidder's offer will not be considered.