

## CONTRACT QUALITY REQUIREMENT

<b>PROJECT: SINGRAULI STAGE – I &amp; II (5X200MW + 2X500MW)</b>	<b>CONTRACT QUALITY REQUIREMENTS (CQR) for <u>Switch Mode High Frequency Transformer Rectifier sets(HFTR).</u></b>	PAGE :Page 1 of 2 DATE : 15 04 2015	<b>## BHEL Enquiry No: 4251238E/OT</b>  <b>##Supplier Name:</b>  <b>##Offer reference:</b>  <b>##Date:</b>
<b>Sl. NO.</b>	<b>DESCRIPTION</b>	<b>BHEL/NTPC Requirements</b>	<b>##Specific confirmations by the vendor</b>

## All marked details to be necessarily filled up by the vendor at the time of offer itself otherwise their offer may not be considered w.r.t Quality Requirements being the specific requirements of ultimate customer

01	<b>Sub Qualification Requirements</b>	The manufactured should have already supplied at least 70KV/1000mA silicon oil filled switch mode high frequency transformer rectifier sets ( either stand alone or in combination with HVTR) in one ESP of 200MW or higher rated coal fired coal fired unit which is in successful operation for a minimum one year as on date 08 01 2013.	
02	<b>Quality plan requirements</b>	1. Manufacturing Quality Plan (MQP) shall be submitted for BHEL/NTPC for review and approval.  2. If the supplier is already possession of NTPC approved Reference Quality Plan (RQP), the same may be submitted to BHEL.  3. In case of supplier having NTPC approved RQP, an endorsement sheet duly signed by vendor shall be submitted along with RQP for BHEL/NTPC approval.	
03	<b>Type test requirements</b>	1. Vendor shall submit the type test reports of all the type tests as listed in SL NO: 5 and carried out with in 5 years from the data of NTPC bid opening (08.01.2013). These reports should be for the test conducted on the similar equipment to those proposed to be supplied under this enquiry and test(s) should have been either conducted at an independent laboratory (or) should have been witnessed by TPI/ BHEL/NTPC.  2. However if vendor is not able to submit the similar type test report as per above condition (or) in the case of type test reports are not found to be meeting the tender specification requirement, the vendor shall conduct all the tests at no additional cost to BHEL either at third party lab (or) own lab in the presence of Third party inspection agency (TPI)/BHEL/NTPC and submit the reports for approval.	
		3. Type Test reports review and approval by NTPC is a must.	
		4. Specific confirmation /details like Type test certificate reference, Date of test and venue etc shall be given as per annexure-I (Enclosed by purchase) at the time of offer itself.	

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04	<b>Type test requirements Continued...</b> .....	<p><b>5. Applicable list of type test for HFTR</b></p> <ol style="list-style-type: none"> <li>i. Temperature rise test at rated Dc current at 1:1 charge ratio</li> <li>ii. Lightning impulse voltage test</li> <li>iii. Measurement of harmonic current in no load current</li> <li>iv. Pressure Relief Device test (Bucholz relay)</li> <li>v. Short circuit test</li> <li>vi. Vacuum test on tank</li> <li>vii. Pressure test on tank</li> <li>viii. Induced over voltage</li> <li>ix. Measurement of no load losses and current</li> <li>x. Measurement of Impedance voltage/Short circuit impedance and losses.</li> <li>xi. Measurement of IR</li> <li>xii. Measurement of acoustic sound level</li> <li>xiii. Degree of protection test (IP 55 test) for Marshaling box</li> <li>xiv. Measurement of capacitance and Tan Delta.</li> </ol> <p><b>6. Applicable type test for Electronic controller panel (Switch mode power supply/TR set Controller).</b></p> <ol style="list-style-type: none"> <li>i. Temperature rise test</li> <li>ii. Fast transient Surge withstand capability test(SWC) as for ANSI/IEEE C37.90.1-2002/IEC 60255-22-04-2008 (At Third party Lab)</li> <li>iii. Measurement of harmonic current test</li> <li>iv. Degree of protection test ( IP 56).</li> <li>v. Damp Heat</li> <li>vi. Dry heat</li> </ol>	
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**##Supplier signature with seal**

**BHEL-BHARAT HEAVY ELECTRICAL LIMITED (OVER ALL EQUIPMENT SUPPLIER)**  
**NTPC-NATIONAL THERMAL POWER CORPORATION LIMITED (PLANT OWNER).**



**SUB-SUPPLIER QUESTIONNAIRE**  
(To be filled in by the Proposed Sub Supplier)

Name of Equipment / Item / Process with Model/ Type/ Rating / Capacity/ Size/ Tonnage etc. (As applicable):

\_\_\_\_\_

Trade Name of Product (if any) : \_\_\_\_\_

1. Name of Proposed Sub-Supplier: \_\_\_\_\_

Website: \_\_\_\_\_

2. Address of Regd. Office:

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

Details of contact person:

Name \_\_\_\_\_

Mobile no. \_\_\_\_\_

Desig. \_\_\_\_\_

E-mail:

3. Branch/ Liaison office in Delhi/NCR

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

Details of contact person:

Name \_\_\_\_\_

Mobile no. \_\_\_\_\_

Desig. \_\_\_\_\_

E-mail:

Weekly off day \_\_\_\_\_

4. Address of Works where Item is being manufactured

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

Details of contact person:

Name \_\_\_\_\_  
\_\_\_\_\_

Mobile no. \_\_\_\_\_

Desig. \_\_\_\_\_

E-mail:



**SUB-SUPPLIER QUESTIONNAIRE**  
(To be filled in by the Proposed Sub Supplier)

**5. Details of Proposed Works:**

- a. Year of Establishment of present works : \_\_\_\_\_
- b. Year of Commencement of Manufacturing at the above works : \_\_\_\_\_
- c. Details of change in works address in past, if any : \_\_\_\_\_
- d. TotalArea / Covered Area : \_\_\_\_\_
- e. Details of covered area like no. of sheds, Area of each shed etc. \_\_\_\_\_
- f. Electric power- Connected load: \_\_\_\_\_  
Electric power- Stand by load & system: \_\_\_\_\_

**6. Annual Turnover & Profit in past three years** : \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**7. Do you have in-house Department for:**

- a) Design Yes/No
- b) Research & Development Yes/No
- c) Quality control/Inspection Yes/No
- d) After Sales Service Yes/No

**8. Shift works per day** One/Two/Three

**9. Present Manpower Status:**

Division Status	Graduate		Diploma	Skilled	Un-Skilled	Remarks
	Technica I	Non-Technical				
Design						
Production						
Quality Control/ Inspection						
After Sales Service						



**SUB-SUPPLIER QUESTIONNAIRE**  
(To be filled in by the Proposed Sub Supplier)

- a. Organization chart of the proposed works is enclosed as Annexure: \_\_\_\_\_
- b Organization chart of QA / QC Deptt. is enclosed as Annexure: \_\_\_\_\_
- c. List of Qualified Welders with process etc. is enclosed as Annexure: \_\_\_\_\_
- d. List of Qualified NDT personnel with area of specialization is enclosed as Annexure: \_\_\_\_\_

**10. Brief details of items manufactured:**

Sl. No.	Item & Material (Type/Size/Rating/Model/ Capacity /Tonnage , as applicable)	Installed Capacity	Annual Production Capacity	Annual Production for last Three years		
				I	II	III

**11. Details of foreign Collaboration, if any:**

Sl. No.	Product	Name & Address of Collaborator	Collaboration		
			Scope	Year	Valid upto

12. **Type Test report for the proposed product (similar or higher rating )if applicable is enclosed as Annexure: \_\_\_\_\_**
- 13 **Approval / Certification by National / International standards / Accredited agency for the proposed product (if applicable) is enclosed as Annexure: \_\_\_\_\_**
14. **Statutory / mandatory certification for the proposed product (if applicable) is enclosed as Annexure: \_\_\_\_\_**
15. **Supply Experience list of the proposed product (similar or higher rating) is enclosed as Annexure: \_\_\_\_\_**

[List shall include Item description, (Type/Size/Rating/Model/Capacity/Tonnage, as applicable), Customer name, Quantity, Year of Supply and Year of commissioning]



**SUB-SUPPLIER QUESTIONNAIRE**  
(To be filled in by the Proposed Sub Supplier)

16. **End User's operational feedback certificate for the proposed product is enclosed as Annexure: \_\_\_\_\_**

17. **List of equipment & machinery specific to the proposed product is enclosed as Annexure: \_\_\_\_\_**

(List shall include name of equipment, capacity & nos. etc.)

18. **Process Flow Diagram indicating in-house & outsourced process enclosed as Annexure: \_\_\_\_\_**

19. **General manufacturing facilities available in-house:**

Sl. No.	Description of machine	Type /Capacity / Size / Rating etc as applicable	Number
a)	Material Handling Mobile Crane Fork Lift Over Head Cranes		
b)	Metal Cutting & Bending		
c)	Casting		
d)	Forging		
e)	Fabrication		
f)	Welding		
g)	Machining		
h)	Heat Treatment		
i)	Surface Cleaning Sand Blasting Shot Blasting Pickling		
j)	Painting		
k)	Metal Coating		



**SUB-SUPPLIER QUESTIONNAIRE**  
(To be filled in by the Proposed Sub Supplier)

l)	Packing		
m)	Other, if any		

20.

**a. Inspection & Testing Facilities available in-house:**

Sl. No.	Description	Capacity & Nos.	Make & year of Mfg.	Calibration Status	Validity period



**SUB-SUPPLIER QUESTIONNAIRE**  
(To be filled in by the Proposed Sub Supplier)

**b. List of Testing & Inspection Facilities outsourced, if any with Source of testing and Description enclosed as Annexure: \_\_\_\_\_**

21. **Storage of finished goods (covered / open) :** \_\_\_\_\_

22 **List of the source / make with location of major raw material, bought out items and out sourced process enclosed as Annexure: \_\_\_\_\_**

23. **Quality management:**

23.1 **General**

23.1.1. Work Instruction for different processes available. (Y/N). \_\_\_\_

If yes, enclose list as Annexure \_\_\_\_\_

23.1.2. Evaluation system for raw material/bought out item's supplier is available. (Y/N) \_\_\_\_\_

23.1.3. Records generated during inspection maintained & available for review (Y/N) \_\_\_\_\_

23.1.4 Statistical quality control techniques used (Y/N) \_\_\_\_\_

23.1.5 ISO certificate for the works available (Y/N). \_\_\_\_ If yes, enclose copy as Annexure \_\_\_\_\_

23,2 **Corrective action**

23.2.1 Specifically confirm whether System for identification & disposition of Non Conformity in the process / product is available. (Y/N) \_\_\_\_\_

23.2.2 Specifically confirm whether System for Customer complains & their satisfactory disposal is available. (Y/N) \_\_\_\_\_

23.3. **Documentation Control**

23.3.1 Procedure available for documentation control (Y/N) \_\_\_\_

23.4. **Control of Inspection, Measuring & Testing equipments.**

23.4.1 Procedure for calibration of testing & measuring instrument available. (Y/N) \_\_\_\_

24. **Any Special Information:** \_\_\_\_\_



**SUB-SUPPLIER QUESTIONNAIRE**  
(To be filled in by the Proposed Sub Supplier)

26. I CERTIFY THAT THE INFORMATION SUPPLIED HEREIN (INCLUDING ALL PAGES ATTACHED) IS CORRECT TO THE BEST OF MY KNOWLEDGE.

SEAL \_\_\_\_\_  
M/S. \_\_\_\_\_  
PLACE \_\_\_\_\_  
DATE \_\_\_\_\_

SIGNATURE \_\_\_\_\_  
NAME \_\_\_\_\_  
DESIGNATION \_\_\_\_\_  
MOBILE NO \_\_\_\_\_  
EMAIL \_\_\_\_\_

**LIST OF ENCLOSURE:**

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**Certification by Main Supplier:** Above information have been verified and found in order / minor changes which have been marked and initialed on this form itself / observed the following discrepancies.

Name : \_\_\_\_\_ Designation : \_\_\_\_\_ Signature : \_\_\_\_\_ Date : \_\_\_\_\_

**NOTE :**

- 1. COLUMN SHALL NOT BE LEFT UNFILLED..IN CASE OF NOT APPLICABLE / NOT AVAILABLE, THE SAME SHALL BE INDICATED IN THE PROVIDED SPACE.**
- 2. IN CASE PROVIDED SPACE IS NOT ADEQUATE, INFORMATION SHALL BE PROVIDED AS AN ATTACHMENT.**
- 3. PRODUCT CATALOGUE FOR THE PROPOSED EQUIPMENT/ITEM/PROCESS,IF AVAILABLE, SHALL BE ENCLOSED**

## PERFORMANCE CERTIFICATE

**END USER CERTIFICATE FOR THE PROPOSED EQUIPMENT (ATLEAST FROM ONE END USER) COMPLYING TO CLAUSE 1.1 OF BHEL TENDER SPECIFICATION (TECI:NTPC:SMPS:REV 00) SHOULD NECESSARILY CONTAIN THE FOLLOWING INFORMATION:**

1. Name of the Power station and its location :
2. Name of Client/Owner with full address, Fax No. & Tel.No. :
3. Name and Designation of the responsible contact person in client's/owner's organization :
4. Name of Package/Contract :
5. Contract/Order No. and date :
6. *Capacity in MW of Coal Fired Unit* :
7. *Date of commissioning* :
8. *Date of commencement of successful operation* :
9. Total quantity of HFTR Sets (in Numbers) supplied in the above Unit (project) in the above contract
10. Technical Particulars of the equipment supplied: \_\_\_\_\_ KV \_\_\_\_\_mA
  - (a) Make :
  - (b) KVA rating at 50 C ambient :
  - (c) Rated DC voltage (KVp) :
  - (d) Rated secondary current (Milli Ampere) :
  - (e) Type of oil filled : Silicone Oil
11. Specific mention about the satisfactory operation of the above equipment supplied for one year period from the date of Commissioning
12. Signature with seal and date

**Tender 4251238E/OT**

**EXPERIENCE PARTICULARS for SMPS**

**EXPERIENCE FOR THE PARTICULAR TYPE OF EQUIPMENT / ITEM INDICATED IN  
THE ENQUIRY:**

CUSTOMER NAME, PROJECT NAME	TYPE / RATING / MODEL/ CAPACITY/ SIZE/ TONNAGE ETC (AS APPLICABLE)	SUPPLIED QUANTITY	DATE OF SUPPLY	NO. OF YEARS IN OPERATION/ DATE OF COMMISSIONING (*)

**(\*) End User Certificate**