

# TENDER SPECIFICATION

SI No	Tender Specification Number	Unit Number & Project
1	BHE/PW/PUR/SAT-GEN/1241	Unit #10, 210 MW Satpura TPS

FOR

JOB OF TAKING OVER THE DAMAGED GENERATOR & ASSOCIATED COMPONENTS OF UNIT # 10 SATPURA PROJECT FROM BHEL SITE, DISMANTLING, LIFTING IT FROM FOUNDATION USING BHEL / MPPGCL EOT CRANES, PACKING, LOADING ON TRAILER AND LASSING AND, RECEIPT OF GENERATOR STATOR & ROTOR & ASSOCIATED MATERIALS FROM BHEL FROM TRAILERS/ TRUCKS, UNPACKING, LIFTING, CLEANING, INSTALLATION OF GENERATOR STATOR, ROTOR & ASSOCIATED COMPONENTS, ASSEMBLY, COMMISSIONING, PAINTING & HANDING OVER TO BHEL/ MPPGCL OF 250 MW UNIT # 10

## VOLUME – I

### CONSISTING OF:

- Notice Inviting Tender,
- Volume-IA : Technical Conditions of Contract,
- Volume-IB : Special Conditions of Contract,
- Volume-IC : General Conditions of Contract
- Volume-ID : Forms & Procedures



**Bharat Heavy Electricals Limited**  
(A Government of India Undertaking)  
Power Sector - Western Region  
345-Kingsway, Nagpur-440001

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## **Tender Specification Issue Details**

### **TENDER SPECIFICATION**

<b>SI No</b>	<b>Tender Specification Number</b>	<b>Unit Number &amp; Project</b>
<b>1</b>	<b>BHE/PW/PUR/SAT-GEN/1241</b>	<b>Unit #10, 210 MW Satpura TPS</b>

FOR

JOB OF TAKING OVER THE DAMAGED GENERATOR & ASSOCIATED COMPONENTS OF UNIT # 10 SATPURA PROJECT FROM BHEL SITE, DISMANTLING, LIFTING IT FROM FOUNDATION USING BHEL / MPPGCL EOT CRANES, PACKING, LOADING ON TRAILER AND LASSING AND, RECEIPT OF GENERATOR STATOR & ROTOR & ASSOCIATED MATERIALS FROM BHEL FROM TRAILERS/ TRUCKS, UNPACKING, LIFTING, CLEANING, INSTALLATION OF GENERATOR STATOR, ROTOR & ASSOCIATED COMPONENTS, ASSEMBLY, COMMISSIONING, PAINTING & HANDING OVER TO BHEL/ MPPGCL OF 250 MW UNIT # 10

EARNEST MONEY DEPOSIT: Refer Notice Inviting Tender

LAST DATE FOR                      Refer Notice Inviting Tender

THESE TENDER SPECIFICATION DOCUMENTS CONTAINING VOLUME-I AND VOLUME- II ARE ISSUED TO:

M/s. ....

.....

PLEASE NOTE:  
THESE TENDER SPECS DOCUMENTS ARE NOT TRANSFERABLE.

Bharat Heavy Electricals Limited

AGM (Purchase)

1241

# NOTICE INVITING TENDER

Bharat Heavy Electricals Limited



Ref: BHE/PW/PUR/SAT-GEN/1241

Date: 01.03.2014

**NOTICE INVITING TENDER (NIT)**  
**NOTE: BIDDER MAY DOWNLOAD FROM WEB SITES  
OR  
PURCHASE TENDERS FROM THIS OFFICE ALSO**

To

Dear Sir/Madam

**Sub : NOTICE INVITING TENDER**

Sealed offers in two part bid system are invited from reputed & experienced bidders (meeting [PRE QUALIFICATION CRITERIA](#) as mentioned in Annexure-I) for the subject job by the undersigned on the behalf of BHARAT HEAVY ELECTRICALS LIMITED as per the tender document. Following points relevant to the tender may please be noted and complied with.

**1.0 Salient Features of NIT**

SL NO	ISSUE	DESCRIPTION
i	TENDER NUMBER	BHE/PW/PUR/SAT-GEN/1241
ii	Broad Scope of job	JOB OF TAKING OVER THE DAMAGED GENERATOR & ASSOCIATED COMPONENTS OF UNIT # 10 SATPURA PROJECT FROM BHEL SITE, DISMANTLING, LIFTING IT FROM FOUNDATION USING BHEL / MPPGCL EOT CRANES, PACKING, LOADING ON TRAILER AND LASSING AND, RECEIPT OF GENERATOR STATOR & ROTOR & ASSOCIATED MATERIALS FROM BHEL FROM TRAILERS/ TRUCKS, UNPACKING, LIFTING, CLEANING, INSTALLATION OF GENERATOR STATOR, ROTOR & ASSOCIATED COMPONENTS, ASSEMBLY, COMMISSIONING, PAINTING & HANDING OVER TO BHEL/ MPPGCL OF 250 MW UNIT # 10
iii	DETAILS OF TENDER DOCUMENT	
a	Volume-IA	<i>Technical Conditions of Contract (TCC) consisting of Scope of work, Technical Specification, Drawings, Procedures, Bill of Quantities, Terms of payment, etc</i> <span style="float: right;">Applicable</span>
b	Volume-IB	<i>Special Conditions of Contract (SCC)</i> <span style="float: right;">Applicable</span>
c	Volume-IC	<i>General Conditions of Contract (GCC)</i> <span style="float: right;">Applicable</span>
d	Volume-ID	<i>Forms and Procedures</i> <span style="float: right;">Applicable</span>
e	Volume-II	<i>Price Schedule (Absolute value).</i> <span style="float: right;">Applicable</span>
iv	Issue of Tender	<b>1. Sale from BHEL PS Regional office at :</b>

# BHEL PSWR

## Notice Inviting Tender

Tender Specification No : BHE/PW/PUR/SAT-GEN /1241

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	Documents	<b>Start : 01.03.2014 ,</b> <b>Closes: 07.03.2014 , Time : 16.00 Hrs</b> <b>2. From BHEL website (<a href="http://www.bhel.com">www.bhel.com</a>)</b> Tender documents will be available for downloading from website till due date of submission	Applicable/ Not applicable
v	<b>DUE DATE &amp; TIME OF OFFER SUBMISSION</b>	<b>Date : 10.03.2014, Time 15.00 Hrs</b> <b>Place : <u>BHEL PS Regional office at :Nagpur</u></b> Tenders being submitted through representative shall be submitted at dispatch section of of PSWR HQ Office after making entry/registration at the reception. For any assistance on the matter kindly contact following officials: <ul style="list-style-type: none"> <li>Saravana Kumar/Engineer(Purchase)</li> <li>Nirmal P.G/ Asst.Engineer(Purchase)</li> </ul>	Applicable
vi	<b>OPENING OF TENDER</b>	<b>1 hours after the latest due date and time of Offer submission</b> Notes: (1) In case the due date of opening of tender becomes a non-working day, then the due date & time of offer submission and opening of tenders get extended to the next working day. (2) Bidder may depute representative to witness the opening of tender	Applicable
vii	<b>EMD AMOUNT</b>	Rs 60,000/- (Rupees Sixty Thousand Only)	Applicable
viii	<b>COST OF TENDER</b>	Rs 2000/-	Applicable
ix	<b>LAST DATE FOR SEEKING CLARIFICATION</b>	3 DAYS before the due date of offer submission. Along with soft version also, addressing to undersigned & to others as per contact address given below	Applicable
x	<b>SCHEDULE OF Pre Bid Discussion (PBD)</b>	Date :	Applicable/Not applicable.
xi	<b>INTEGRITY PACT &amp; DETAILS OF INDEPENDENT EXTERNAL MONITOR (IEM)</b>	_____	Applicable/Not applicable.
xii	<b>Latest updates</b>	Latest updates on the important dates, Amendments, Correspondences, Corrigenda, Clarifications, Changes, Errata, Modifications, Revisions, etc to Tender Specifications will be hosted in BHEL webpage ( <a href="http://www.bhel.com">www.bhel.com</a> -->Tender Notifications →View Corrigendums) <b>and not in the newspapers</b> . Bidders to keep themselves updated with all such information	

- 2.0 The offer shall be submitted as per the instructions of tender document and as detailed in this NIT. Bidders to note specifically that all pages of tender document, including these NIT pages of this particular tender together with subsequent correspondences shall be submitted by them, duly signed & stamped on each page, as part of offer. **Rates/Price including discounts/rebates, if any, mentioned anywhere/in any form in the techno-commercial offer other than the Price Bid, shall not be entertained.**

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- 3.0 Unless specifically stated otherwise, bidder shall remit cost of tender and courier charges if applicable, in the form of Demand Draft drawn in favour of Bharat Heavy Electricals Ltd, payable at Power Sector Regional HQ at Nagpur issuing the Tender, along with techno-commercial offer. Bidder may also choose to deposit the Tender document cost by cash at the Cash Office as stated above against sl no iv of 1, on any working day; and in such case copy of Cash receipt is to be enclosed with the Techno Commercial offer. Sale of tender Documents shall not take place on National Holidays, holidays declared by Central or State Governments and BHEL PS HQ at Nagpur, Sundays and second/ last Saturdays
- 4.0 Unless specifically stated otherwise, bidder shall deposit EMD through Demand Draft/Pay Order in favour of Bharat Heavy Electricals Ltd, payable at Nagpur. For other details and for 'One Time EMD' please refer General Conditions of Contract.
- 5.0 **Procedure for Submission of Tenders:** The Tenderers must submit their Tenders to Officer inviting Tender, as detailed below:
- PART-I consisting of 'PART-I A (Techno Commercial Bid)' & 'PART-I B (EMD/COST of TENDER)' in two separate sealed and superscribed envelopes (ENVELOPE-I & ENVELOPE-II)
  - PART-II (Price Bid) – in sealed and superscribed envelope (ENVELOPE-III)
  - One set of tender documents shall be retained by the bidder for their reference
- 6.0 The contents for ENVELOPES and the superscription for each sealed cover/Envelope are as given below.  
**(All pages to be signed and stamped)**

Sl no	Description	Remarks
	<b>Part-I A</b>	
	<b><u>ENVELOPE – I superscribed as :</u></b> PART-I (TECHNO COMMERCIAL BID) TENDER NO : NAME OF WORK : PROJECT: DUE DATE OF SUBMISSION:  <b><u>CONTAINING THE FOLLOWING:-</u></b>	
i.	Covering letter/Offer forwarding letter of Tenderer.	
ii.	Duly filled-in 'No Deviation Certificate' as per prescribed format to be placed after document under sl no (i) above.  <b><u>Note:</u></b> a. In case of any deviation, the same should be submitted separately for technical & commercial parts, indicating respective clauses of tender against which deviation is taken by bidder. The list of such deviation shall be placed after document under sl no (i) above. It shall be specifically noted that deviation recorded elsewhere shall not be entertained. b. BHEL reserves the right to accept/reject the deviations without assigning any reasons, and BHEL decision is final and binding. i). In case of acceptance of the deviations, appropriate loading shall be done by BHEL ii). In case of unacceptable deviations, BHEL reserves the right	

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	to reject the tender	
iii.	Supporting documents/ annexure/ schedules/ drawing etc as required in line with Pre-Qualification criteria.  It shall be specifically noted that all documents as per above shall be indexed properly and credential certificates issued by clients shall distinctly bear the name of organization, contact ph no, FAX no, etc.	
iv.	All Amendments/Correspondences/Corrigenda/Clarifications/Changes/ Errata etc pertinent to this NIT.	
v.	Integrity Pact Agreement (Duly signed by the authorized signatory)	If applicable
vi.	Duly filled-in annexures, formats etc as required under this Tender Specification/NIT	
vii.	Notice inviting Tender (NIT)	
viii.	Volume – I A : <u>Technical</u> Conditions of Contract (TCC) consisting of Scope of work, Technical Specification, Drawings, Procedures, Bill of Quantities, Terms of payment, etc	
ix.	Volume – I B : Special Conditions of Contract (SCC)	
x.	Volume – I C : General Conditions of Contract (GCC)	
xi.	Volume – I D : Forms & Procedures	
xii.	Volume – II (UNPRICED – without disclosing rates/price, but mentioning only 'QUOTED' or 'UNQUOTED' against each item	
xiii.	Any other details preferred by bidder with proper indexing.	

	<b>PART-I B</b>	
	<b><u>ENVELOPE – II superscribed as:</u></b> PART-I (EMD/COST of TENDER) TENDER NO : NAME OF WORK : PROJECT: DUE DATE OF SUBMISSION:  <b><u>CONTAINING THE FOLLOWING:-</u></b>	
i.	1. Earnest Money Deposit (EMD) in the form as indicated in this Tender <div style="text-align: center;"><b><u>OR</u></b></div> Documentary evidence for 'One Time EMD' with the Power Sector Region of BHEL floating the Tender  2. Cost of Tender ( Demand Draft or copy of Cash Receipt as the case may be)	

	<b>PART-II</b>	
	<b>PRICE BID</b> consisting of the following shall be enclosed	
	<b><u>ENVELOPE-III</u></b> superscribed as: PART-II (PRICE BID) TENDER NO : NAME OF WORK :	

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	PROJECT: DUE DATE OF SUBMISSION:	
	<b>CONTAINING THE FOLLOWING</b>	
i	Covering letter/Offer forwarding letter of Tenderer enclosed in Part-I	
ii	Volume II – PRICE BID ( Duly Filled in Schedule of Rates – rate/price to be entered in words as well as figures)	

	<b>OUTER COVER</b>	
	<b>ENVELOPE-IV</b> (MAIN ENVELOPE / OUTER ENVELOPE) superscribed as: TECHNO-COMMERCIAL BID, PRICE BID & EMD TENDER NO: NAME OF WORK: PROJECT: DUE DATE OF SUBMISSION:	
	<b>CONTAINING THE FOLLOWING:</b>	
i	<ul style="list-style-type: none"><li>○ Envelopes I</li><li>○ Envelopes II</li><li>○ Envelopes III</li></ul>	

SPECIAL NOTE : All documents/ annexures submitted with the offer shall be properly annexed and placed in respective places of the offer as per enclosure list mentioned in the covering letter. BHEL shall not be responsible for any missing documents.

- 7.0 Deviation with respect to tender clauses and additional clauses/suggestions in Techno-commercial bid / Price bid shall NOT be considered by BHEL. Bidders are requested to positively comply with the same.
- 8.0 BHEL reserves the right to accept or reject any or all Offers without assigning any reasons thereof. BHEL also reserves the right to cancel the Tender wholly or partly without assigning any reason thereof. Also BHEL shall not entertain any correspondence from bidders in this matter (except for the refund of EMD).
- 9.0 Since the job shall be executed at site, bidders must visit site/ work area and study the job content, facilities available, availability of materials, prevailing site conditions including law & order situation, applicable wage structure, wage rules, etc before quoting for this tender. They may also consult this office before submitting their offers, for any clarifications regarding scope of work, facilities available at sites or on terms and conditions.
- 10.0 Since the job shall be executed at site, bidders must visit site/ work area and study the job content, facilities available, availability of materials, prevailing site conditions including law & order situation, applicable wage structure, wage rules, etc before quoting for this tender. They may also consult this office before submitting their offers, for any clarifications regarding scope of work, facilities available at sites or on terms and conditions.

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- 11.0 For any clarification on the tender document, the bidder may seek the same in writing or through e-mail, as per specified format, within the scheduled date for seeking clarification, from the office of the undersigned. BHEL shall not be responsible for receipt of queries after due date of seeking clarification due to postal delay or any other delays. Any clarification / query received after last date for seeking clarification may not be normally entertained by BHEL and no time extension will be given.
- 12.0 BHEL may decide holding of pre-bid discussion [PBD] with all intending bidders as per date indicated in the NIT. The bidder shall ensure participation for the same at the appointed time, date and place as may be decided by BHEL. Bidders shall plan their visit accordingly. The outcome of pre-bid discussion (PBD) shall also form part of tender.
- 13.0 In the event of any conflict between requirement of any clause of this specification/ documents/drawings/data sheets etc or requirements of different codes/standards specified, the same to be brought to the knowledge of BHEL in writing for clarification before due date of seeking clarification (whichever is applicable), otherwise, interpretation by BHEL shall prevail. Any typing error/missing pages/ other clerical errors in the tender documents, noticed must be pointed out before pre-bid meeting/submission of offer, else BHEL's interpretation shall prevail.
- 14.0 Unless specifically mentioned otherwise, bidder's quoted price shall deemed to be in compliance with tender including PBD.
- 15.0 Bidders shall submit Integrity Pact Agreement (Duly signed by authorized signatory who signs in the offer), **if applicable**, along with techno-commercial bid. This pact shall be considered as a preliminary qualification for further participation. **The names and other details of Independent External Monitor (IEM) for the subject tender is as given at point (1) above.**
- 16.0 The Bidder has to satisfy the Pre Qualifying Requirements stipulated for this Tender in order to be qualified. The Price Bids of only those bidders will be opened who will be qualified for the subject job on the basis of satisfying the Pre Qualification Criteria specified in this NIT as per Annexure-I (as applicable), past performance etc. and date of opening of price bids shall be intimated to only such bidders. BHEL reserves the right not to consider offers of parties under HOLD.
- 17.0 In case BHEL decides on a 'Public Opening', the date & time of opening of the sealed PRICE BID shall be intimated to the qualified bidders and in such a case, bidder may depute one authorised representative to witness the price bid opening. BHEL reserves the right to open 'in-camera' the 'PRICE BID' of any or all Unsuccessful/Disqualified bidders under intimation to the respective bidders.
- 18.0 Validity of the offer shall be for **six months** from the latest due date of offer submission (including extension, if any) unless specified otherwise.
- 19.0 BHEL reserves the right to decide the successful bidder on the basis of Reverse Auction process. In such case all qualified bidders will be intimated regarding procedure/ modality for Reverse Auction process prior to Reverse Auction and price will be decided as per the rules for Reverse Auction. .
- However, if reverse auction process is unsuccessful as defined in the RA rules/procedures, or for whatsoever reason, then the sealed 'PRICE BIDS' will be opened for deciding the successful bidder. BHEL's decision in this regard will be final and binding on bidder.
- 20.0 On submission of offer, further consideration will be subject to compliance to tender & qualifying requirement and customer's acceptance, as applicable.

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- 21.0 In case the bidder is an "Indian Agent of Foreign Principals", 'Agency agreement has to be submitted along with Bid, detailing the role of the agent along with the terms of payment for agency commission in INR, along with supporting documents.
- 22.0 The bidders shall not enter into any undisclosed M.O.U. or any understanding amongst themselves with respect to tender.
- 23.0 Consortium Bidding (or Technical Tie up) shall be allowed only if specified in Pre Qualifying Requirement (PQR) criteria, and in such a case the following shall be complied with:
- 23.1 Prime Bidder and Consortium Partner or partners are required to enter into a consortium agreement with a validity period of six months initially. In case the consortium is awarded the contract, then the Consortium Agreement between the Prime Bidder and Consortium Partner or partners shall be extended till contractual completion period including extension periods if any applicable.
- 23.2 'Stand alone' bidder cannot become a **Prime Bidder' or a 'Consortium bidder' or 'Technical Tie up bidder' in a consortium (or Technical Tie up) bidding**. Prime bidder shall neither be a consortium partner to other prime bidder nor take any other consortium partners. However, consortium partner may enter into consortium agreement with other prime bidders. In case of non compliance, consortium bids of such Prime bidders will be rejected.
- 23.3 Number of partners for a consortium Bidding (or Technical Tie up) shall be as specified in the PQR
- 23.4 Prime Bidder shall be as specified in the Pre Qualification Requirement, else the bidder who has the major share of work
- 23.5 In order to be qualified for the tender, Prime Bidder and Consortium partner or partners shall satisfy (i) the Technical 'Pre Qualifying Requirements' specified for the respective package, (ii) "Assessment of Capacity of Bidder" as specified in clause 9.0
- 23.6 Prime Bidder shall comply with additional 'Technical' criteria of PQR as defined in 'Explanatory Notes for the PQR'
- 23.7 Prime Bidder shall comply with all other Pre Qualifying criteria for the Tender unless otherwise specified
- 23.8 In case customer approval is required, then Prime Bidder and Consortium Partner or partners shall have to be individually approved by Customer for being considered for the tender.
- 23.9 Prime Bidder shall be responsible for the overall execution of the contract
- 23.10 In case of award of job, Performance shall be evaluated for Prime Bidder and Consortium Partner or partners for their respective scope of work(s) as per prescribed formats
- 23.11 In case the Consortium partner or partners back out, their SDs shall be encashed by BHEL. In such a case, other consortium partner or partners meeting the PQR have to be engaged by the Prime Bidder, and if not, the respective work will be withdrawn and executed on risk and cost basis of the Prime Bidder. The new consortium partner or partners shall submit fresh SDs as applicable.

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- 23.12 In case the prime Bidder withdraws, the whole contract shall be considered cancelled and short closed.
- 23.13 After execution of work, the work experience shall be assigned to the Prime Bidder and the consortium partner or partners for their respective scope of work. After successful execution of two similar works with the same consortium partner or partners under direct orders of BHEL, the Prime Bidder shall be eligible for becoming a 'stand alone' bidder for similar works, subject to certification from BHEL about the active involvement of the Prime Bidder for satisfactory execution of the works.
- 23.14 The consortium partner shall submit SD equivalent to 2% of the total contract value in addition to the SD to be submitted by the prime Bidder for the total contract value. In case there are two consortium partners, then each partner shall submit SD equivalent to 1% of the total contract value in addition to the SD to be submitted by the prime Bidder for the total contract value.
- 23.15 In case of a Technical Tie up, all the clauses applicable for the Consortium partner shall be applicable for the Technical Tie up partner also
- 24.0 The bidder shall submit documents in support of possession of 'Qualifying Requirements' duly self certified and stamped by the authorized signatory, indexed and properly linked in the format for PQR. In case BHEL requires any other documents/proofs, these shall be submitted immediately.
- 25.0 The bidder may have to produce original document for verification if so decided by BHEL.
- 26.0 Order of Precedence  
In the event of any ambiguity or conflict between the Tender Documents, the order of precedence shall be in the order below:
- a. Amendments/Clarifications/Corrigenda/Errata etc issued in respect of the tender documents by BHEL
  - b. Notice Inviting Tender (NIT)
  - c. Price Bid
  - d. Technical Conditions of Contract (TCC)—Volume-1A
  - e. Special Conditions of Contract (SCC) —Volume-1B
  - f. General Conditions of Contract (GCC) —Volume-1C
  - g. Forms and Procedures —Volume-1D

It may please be noted that guidelines/rules in respect of suspension of business dealings', 'Vendor evaluation format', 'Quality, Safety & HSE guidelines', etc may undergo change from time to time and the latest one shall be followed

for BHARAT HEAVY ELECTRICALS LTD

AGM Pur

**Enclosure**

1. Annexure-1: Pre Qualifying criteria.
2. Annexure-2: Check List.
3. Annexure-4: Important Information.
4. Other Tender documents as per this NIT.

**ANNEXURE - 1**

**PRE QUALIFYING REQUIREMENTS**

<b>JOB</b>	JOB OF TAKING OVER THE DAMAGED GENERATOR & ASSOCIATED COMPONENTS OF UNIT # 10 SATPURA PROJECT FROM BHEL SITE, DISMANTLING, LIFTING IT FROM FOUNDATION USING BHEL / MPPGCL EOT CRANES, PACKING, LOADING ON TRAILER AND LASSING AND, RECEIPT OF GENERATOR STATOR & ROTOR & ASSOCIATED MATERIALS FROM BHEL FROM TRAILERS/ TRUCKS, UNPACKING, LIFTING, CLEANING, INSTALLATION OF GENERATOR STATOR, ROTOR & ASSOCIATED COMPONENTS, ASSEMBLY, COMMISSIONING, PAINTING & HANDING OVER TO BHEL/ MPPGCL OF 250 MW UNIT # 10
<b>TENDER NO</b>	<b>BHE/PW/PUR/SAT-STG/1241</b>

SL NO	PRE QUALIFICATION CRITERIA	Bidders claim in respect of fulfilling the PQR Criteria	
		Name and Description of qualifying criteria	Page no of supporting document. Bidder must fill up this column as per applicability
A	Submission of Integrity Pact duly signed (if applicable)	NOT APPLICABLE	
B	<p><b><u>Technical</u></b></p> <p>Bidder must have executed following works {i.e. Bidder must meet (B.1.1 or B.1.2 or B.1.3)} in the last seven (7) years as on latest date of bid submission:-</p> <p><b>B.1.1)</b> Bidder must have, Executed Erection and Commissioning of atleast one Generator of a Unit of rating 110MW or above.</p> <p style="text-align: center;"><b>OR</b></p> <p><b>B.1.2)</b> Bidder must have, Executed One Job of Overhauling of a Generator of rating 110MW or above</p> <p style="text-align: center;"><b>OR</b></p> <p><b>B.1.3)</b> Bidder must have, Executed One Job of Overhauling of a Generator of value not less than <b>Rs 8 Lakhs</b> against single work order.</p>	APPLICABLE	

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C-1	<b><u>FINANCIAL TURNOVER</u></b> Bidders must have achieved an average annual financial turnover (Audited) of <b>Rs. 7 Lakhs</b> or more over last three Financial Years (FY) i.e. 2010-2011, 2011-2012, 2012-2013.	APPLICABLE	
C-2	<b><u>NETWORTH (only in case of Companies)</u></b> Net worth of the Bidder based on the latest Audited Accounts as furnished for 'C-1' above should be positive	APPLICABLE	
C-3	<b><u>PROFIT</u></b> Bidder must have earned cash profit in any one of the three Financial Years as applicable in the last three Financial Years defined in 'C-1' above based on latest Audited Accounts.	APPLICABLE	
D	Assessment of Capacity of Bidder to execute the work as per sl no 9 of NIT (if applicable)	NOT APPLICABLE	By BHEL
E	<b><u>Approval of Customer (if applicable)</u></b> <b>Note:</b> Names of bidders (including consortium/Technical Tie up partners in case consortium bidding is permitted) who stand qualified after compliance of criteria A to D shall be forwarded to customer for their approval.	NOT APPLICABLE	BY BHEL
F	<b><u>Price Bid Opening</u></b> <b>Note:</b> Price Bids of only those bidders shall be opened who stand qualified after compliance of criteria A to E.	APPLICABLE	BY BHEL
G	Consortium criteria	NOT APPLICABLE	
<b><u>Explanatory Notes for the PQR (unless otherwise specified in the PQR):</u></b> <ol style="list-style-type: none"> <li>Bidder to submit Audited Balance Sheet and Profit and Loss Account for the respective years as indicated against C-1 above along with all annexures</li> <li>In case audited Financial statements have not been submitted for all the three years as indicated against C-1 above, then the applicable audited statements submitted by the bidders against the requisite three years, will be averaged for three years i.e total divided by three.</li> <li>C-2:-NETWORTH : Shall be calculated based on the latest Audited Accounts as furnished for C-1 above. Net worth = Paid up share capital + Reserves. (Net worth is required to be evaluated in case of companies)</li> <li>C-3:- PROFIT : shall be NET profit (PAT + Non cash expenditure viz depreciation) earned during any one of the three financial years as in C-1 above</li> <li><del>'Additional' Criteria in respect of 'Technical' criteria of PQR (as in 'B' above) for Civil, Electrical, CI, unless otherwise specified:-</del> <ol style="list-style-type: none"> <li><del>Bidder should have executed similar work of any one of the following:</del> <ol style="list-style-type: none"> <li><del>One (1) work of value not less than Rs XXX</del></li> </ol> </li> </ol> </li> </ol>			

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	<p style="text-align: center;"><del>_____OR</del></p> <p><del>b. Two (2) works of not less than Rs YYY</del></p> <p style="text-align: center;"><del>_____OR</del></p> <p><del>c. Three (3) works of not less than Rs ZZZ</del> (Value XXX, YYY, ZZZ shall be as indicated by BHEL)</p> <p>ii. 'Similar' work for criteria 5 above means</p> <p style="padding-left: 20px;"><del>a. Civil or Structures or Civil &amp; Structures or Chimney respectively as applicable to the tendered scope in respect of 'CIVIL' Works</del></p> <p style="padding-left: 20px;"><del>b. Electrical works in respect of 'ELECTRICAL'</del></p> <p style="padding-left: 20px;"><del>c. CI works in respect of 'CI' Works</del></p> <p style="padding-left: 20px;"><del>d. Material Handling and/or Management works in respect of 'MM' works</del></p> <p>6. Time period for achievement of the 'Technical' criteria of PQR (as in 'B' above) will be the last 7 years ending on the 'latest date' of Bid submission</p> <p>7. 'EXECUTED' means the Vendor should have achieved the criteria specified in the Technical criteria of PQR (as in 'B' above) even if the Contract has not been completed or closed</p> <p>8. Unless otherwise specified, for the purpose of 'Technical' criteria of PQR ( as in 'B' above), the word 'EXECUTED' means:</p> <p style="padding-left: 20px;">i. "BOILER LIGHT UP" in respect of Boiler &amp; Aux and ESP</p> <p style="padding-left: 20px;">ii. "SYNCHRONISATION" in respect of STG/GTG and 'SPINNING' in case of HTG</p> <p style="padding-left: 20px;">iii. "STEAM BLOWING COMPLETION" in respect of at least Main Steam Line of Power Cycle Piping</p> <p style="padding-left: 20px;">iv. "HYDRAULIC TEST" of the system in respect of Structures, Pressure parts/IBR Piping</p> <p style="padding-left: 20px;">v. <del>"CHARGING" in respect of power Transformers, Bus ducts, HT/LT switchgears</del></p> <p style="padding-left: 20px;">vi. <del>"Completion of RCC Shell and liner (steel or brick as per tendered scope) up to the HEIGHT specified using slip form" in case of RCC Chimney.</del></p> <p style="padding-left: 20px;">vii. <del>Achievement of physical Quantities as per respective PQRs in respect of Civil &amp; Structures and Piling Works</del></p> <p style="padding-left: 20px;">viii. 'Readiness for coal Filling' in respect of Bunker Structure Work.</p> <p>9. Boiler means HRSG or WHRB or any other types of Steam Generator</p> <p>10. Critical/Power Cycle piping means Main Steam, Hot Reheat, Cold Reheat, HP Bypass, LP Bypass lines</p> <p>11. For the purpose of evaluation of the PQR, one MW shall be considered equivalent to 3.5TPH where ever rating of HRSG/BOILER is mentioned in MW. Similarly, where ever rating of Gas Turbine is mentioned in terms of Frame size, ISO rating in terms of MW shall be considered for evaluation.</p> <p>12. <del>In case the experience/PO/WO certificate enclosed by bidders do not have separate break up prices for the E&amp;C portion of Electrical and CI Works, (i.e. the certificates enclosed are for composite order for supply and erection of Electrical &amp; CI and other works if any), then value of Erection and Commissioning for the Electrical &amp; CI portion shall be considered as 15% of the supply &amp; erection of Electrical &amp; CI, unless otherwise specifically indicated in the PQR.</del></p> <p>13. Scope for capital overhaul of STG shall cover Bearing Inspection work and overhauling of all cylinders of the Turbine unless otherwise specifically indicated in the PQR.</p> <p>14. In case the tendered scope is not a Pulverised Fuel Boiler, experience of Oil/Gas Fired Boilers also can be considered unless otherwise specifically indicated in the PQR.</p>
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BIDDER SHALL SUBMIT ABOVE PRE-QUALIFICATION CRITERIA FORMAT, DULY FILLED-IN, SPECIFYING RESPECTIVE ANNEXURE NUMBER AGAINST EACH CRITERIA AND FURNISH RELEVANT DOCUMENT INCLUSIVE OF WORK ORDER AND WORK COMPLETION CERTIFICATE ETC IN THE RESPECTIVE ANNEXURES IN THEIR OFFER.

**ANNEXURE - 2**

**CHECK LIST**

**NOTE:- Tenderers are required to fill in the following details and no column should be left blank**

1	Name and Address of the Tenderer		
2	Details about type of the Firm/Company		
3.a	Details of Contact person for this Tender	Name : Mr/Ms Designation: Telephone No: Mobile No: Email ID: Fax No:	
3.b	Details of alternate Contact person for this Tender	Name : Mr/Ms Designation: Telephone No: Mobile No: Email ID: Fax No:	
4	EMD DETAILS	DD No:                      Date : Bank :                      Amount: Please tick ( ✓ ) whichever applicable:- ONE TIME EMD / ONLY FOR THIS TENDER	
5	Validity of Offer	TO BE VALID FOR SIX MONTHS FROM DUE DATE	
		APPLICABILITY (BY BHEL)	ENCLOSED BY BIDDER
6	Whether the format for compliance with <b>PRE QUALIFICATION CRITERIA</b> (ANNEXURE-I) is understood and filled with proper supporting documents referenced in the specified format	Applicable	YES / NO
7	Audited profit and Loss Account for the last three years	Applicable	YES/NO
8	Copy of PAN Card	Applicable	YES/NO
9	Whether all pages of the Tender documents including annexures, appendices etc are read understood and signed	Applicable	YES/NO
10	Integrity Pact	NOT Applicable	YES/NO
11	Declaration by Authorised Signatory	Applicable	YES/NO
12	No Deviation Certificate	Applicable	YES/NO
13	Declaration confirming knowledge about Site Conditions	Applicable	YES/NO
14	Declaration for relation in BHEL	Applicable	YES/NO

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Notice Inviting Tender**

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15	Non Disclosure Certificate	Applicable	YES/NO
16	Bank Account Details for E-Payment	Applicable	YES/NO
17	Capacity Evaluation of Bidder for current Tender	NOT Applicable/	YES/NO
18	Tie Ups/Consortium Agreement are submitted as per format	NOT Applicable	YES/NO
19	Power of Attorney for Submission of Tender	Applicable	YES/NO
20	Analysis of Unit rates	Applicable	YES/NO

NOTE : STRIKE OFF 'YES' OR 'NO', AS APPLICABLE. TENDER NOT ACCOMPANIED BY THE PRESCRIBED **ABOVE APPLICABLE DOCUMENTS** ARE LIABLE TO BE SUMMARILY REJECTED.

**DATE :  
SIGNATORY**

**AUTHORISED**  
**(With Name, Designation and Company seal)**

## **ANNEXURE 4: IMPORTANT INFORMATION**

1. The offers of the bidders who are on the banned list as also the offer of the bidders, who engage the services of the banned firms, shall be rejected. The list of banned firms is available on BHEL web site ([www.bhel.com](http://www.bhel.com) ---> Tender Notification -> List of Banned Firms)

2. All Statutory Requirements as applicable for this project shall be complied with.

3. Please take note of following Revised Tender Clauses:

- i. Notice Inviting Tender: SI No 9
- ii. General conditions of Contract: Clause No 1.15.13 (New), Clause No 2.8.3, 2.8.4 and 2.8.5

### **4. Broad Terms & Conditions of Reverse Auction**

In continuation to Clause 19.0 of NIT (Notice Inviting Tender) following are the broad terms and conditions of Reverse Auction are given in Annexure V of NIT:

- 4.1. Against this enquiry for the subject item/ system with detailed scope of supply as per enquiry specifications, BHEL may resort to "REVERSE AUCTION PROCEDURE" i.e., ON LINE BIDDING (THROUGH A SERVICE PROVIDER). The philosophy followed for reverse auction shall be English Reverse (No ties).
- 4.2. BHEL reserves the right to go for Reverse Auction (RA) instead of opening the sealed envelope price bid, submitted by the bidder. This will be decided after techno-commercial evaluation. All bidders to give their acceptance for participation in RA. Non-acceptance to participate in RA may result in non-consideration of their bids. In case BHEL decides to go for Reverse Auction, only those bidders who have given their acceptance to participate in RA will be allowed to participate in the Reverse Auction. Those bidders who have given their acceptance to participate in Reverse Auction will have to necessarily submit „online sealed bid“ in the Reverse Auction. Non-submission of „online sealed bid“ by the bidder will be considered as tampering of the tender process and will invite action by BHEL as per extant guidelines in vogue.
- 4.3. For the proposed reverse auction, technically and commercially acceptable bidders only shall be eligible to participate.
- 4.4. Those bidders who have given their acceptance for Reverse Auction (quoted against this tender enquiry) will have to necessarily submit 'online sealed bid' in the Reverse Auction. Non-submission of 'online sealed bid' by the bidder for any of the eligible items for which techno-commercially qualified, will be considered as tampering of the tender process and will invite action by BHEL as per extant guidelines in vogue.
- 4.5. BHEL will engage the services of a service provider who will provide all necessary training and assistance before commencement of on line bidding on internet.
- 4.6. In case of reverse auction, BHEL will inform the bidders the details of Service Provider to enable them to contact & get trained.
- 4.7. Business rules like event date, time, bid decrement, extension etc. also will be communicated through service provider for compliance.
- 4.8. Bidders have to fax the Compliance form (annexure IV) before start of Reverse auction. Without this, the bidder will not be eligible to participate in the event.

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- 4.9. In line with the NIT terms, BHEL will provide the calculation sheet (e.g., EXCEL sheet) which will help to arrive at "Total Cost to BHEL" like Packing & forwarding charges, Taxes and Duties, Freight charges, Insurance, Service Tax for Services and loading factors (for noncompliance to BHEL standard Commercial terms & conditions) for each of the bidder to enable them to fill-in the price and keep it ready for keying in during the Auction.
- 4.10. Reverse auction will be conducted on scheduled date & time.
- 4.11. At the end of Reverse Auction event, the lowest bidder value will be known on auction portal.
- 4.12. The lowest bidder has to fax/e-mail the duly signed and filled-in prescribed format for price breakup including that of line items, if required, (Annexure VII) as provided on case-to-case basis to Service provider within two working days of Auction without fail.
- 4.13. In case BHEL decides not to go for Reverse Auction procedure for this tender enquiry, the Price bids and price impacts, if any, already submitted and available with BHEL shall be opened as per BHEL "s standard practice.
- 4.14. Bidders shall be required to read the "Terms and Conditions" section of the auctions site of Service provider, using the Login IDs and passwords given to them by the service provider before reverse auction event. Bidders should acquaint themselves of the "Business Rules of Reverse Auction", which will be communicated before the Reverse Auction.
- 4.15. If the Bidder or any of his representatives are found to be involved in Price manipulation/ cartel formation of any kind, directly or indirectly by communicating with other bidders, action as per extant BHEL guidelines, shall be initiated by BHEL and the results of the RA scrapped/ aborted.
- 4.16. The Bidder shall not divulge either his Bids or any other exclusive details of BHEL to any other party.

In case BHEL decides to go for reverse auction, the H1 bidder (whose quote is highest in online sealed bid) may not be allowed to participate in further RA process

5. PVC is not applicable
6. Progress Monitoring, Monthly Review and Performance Evaluation of Vol-I BCD is not applicable. Separate Performance evaluation as per SAS format shall be considered for evaluation purpose.
7. Overrun compensation is not applicable
8. Interest bearing recoverable advances is not applicable
9. Quantity variation is not applicable
10. Extra works in man-hours is not applicable
11. Retention amount shall be 5% of the total contract value.
12. Contractor shall provide primers, paints etc for all purposes for final painting.
13. Contractor shall mobilise at site within 10 days of date of Lol or ten days after despatch of Generator from BHEL, Hardwar
14. Job shall be executed by a single party at a stretch. In case if there is a break in between completion of work of Dismantling and resumption of Installation, the same shall not be compensated.

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

BHARAT HEAVY ELECTRICALS LIMITED



# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## CONTENTS

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SI No	DESCRIPTION	Chapter	No. OF PAGES
Volume-IA	Part-I: Contract specific details & Technical Specifications		
1	Project Information	Chapter-I	
2	Scope of Works	Chapter-II	
3	VOID	Chapter-III	
4	T&Ps and MMDs to be deployed by Contractor	Chapter-IV	
5	T&Ps to be deployed by BHEL free of hire charges on sharing basis	Chapter-V	
6	Time Schedule	Chapter-VI	
7	Terms of Payment	Chapter-VII	
8	Taxes and other Duties	Chapter-VIII	
9	General	Chapter-IX	
10	Generator, Installation & Handling Heavier equipments	Chapter-X	
11	Painting	Chapter-XI	

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## CHAPTER I PROJECT INFORMATION

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1.0	<b>Project Information</b>
1.1	<p><b>BACKGROUND</b></p> <p>BHEL's Client M/s Madhya Pradesh Power Generation Company Limited (MPPGCL) has pulverized Coal based Power Plant at Satpura Thermal Power Plant, Distt-Betul, Madhya Pradesh. The said client has undertaken the process of expanding the capacity of the power plant by setting up two power generation unit of 250 MW rating.</p> <p>Unit #10 Generator Stator and Rotor got damaged on 15/01/2014 and machine tripped. It is the restoration of this machine by way of removal of damaged Stator and installation of new Stator and Rotor. Already Rotor has been dispatched for repairs to BHEL Hardwar.</p> <p><b>However, the Bidder shall acquaint himself by a visit to the site, if felt necessary, with the conditions prevailing at site before submission of the bid. The information given here in under is for general guidance and shall not be contractually binding on BHEL/ Owner. All relevant site data/information as may be necessary shall have to be obtained /collected by the Bidder.</b></p> <p><b><u>LOCATION AND APPROACH :</u></b></p> <p>1) Project: Thermal Power Station extention Units # 10 &amp; 11 (250 MW each).</p> <p>2) Project Location: Satpura, Dist: Betul, Madhya Pradesh, India.</p> <p>3) Transport facilities:</p> <p style="padding-left: 40px;">A) Nearest Railway Station: Ghodadongri on Nagpur Itarsi route. Ghodadongri is 71 Kms from Itarsi on the Itarsi – Betul State Highway.</p> <p style="padding-left: 40px;">B) Road: Sarni/Satpura TPS is connected to Ghodadongri by 20 Km long all-weather district road.</p> <p style="padding-left: 40px;">C) Nearest Airport: Nagpur / 200 Kms, Bhopal / 200 Kms.</p> <p><b>CLIMATIC CONDITIONS:</b></p> <p>1) Maximum ambient Temperature: 47° Centigrade</p> <p>2) Minimum ambient Temperature: 6.5° Centigrade</p> <p>3) Seismic Zone : Part 3, Zone-III as per IS:1893/84</p>

## TECHNICAL CONDITIONS OF CONTRACT (TCC) CONTENTS

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	<p>4) Relative Humidity: 60 %</p> <p>5) Wind Speed: 10 kmph as per IS 875/87.</p> <p><b>GEOGRAPHICAL CONDITION:</b></p> <p>1) Plant Elevation above MSL: 439 m</p>
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**The bidder is advised to visit and examine the site of WORKS and its surroundings and obtain for himself on his own responsibility all information that may be necessary for preparing the bid and entering into the CONTRACT. All costs for and associated with site visits shall be borne by the bidder.**

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter – III:

### 2.0 SCOPE OF WORK

The scope of work for these specifications for 1x250 MW sets covers the complete work as a SINGLE JOB of: taking over the damaged generator & associated components of Unit # 10 Satpura project from BHEL site, dismantling, lifting it from foundation using BHEL / MPPGCL EOT Cranes, packing, loading on trailer, lassing and assistance in despatch, and receipt of Generator Stator & Rotor & associated materials from BHEL from trailers/ trucks, unpacking, lifting, cleaning, etc., installation of Generator Stator, Rotor & associated components, assembly, commissioning, painting & handing over to BHEL/ MPPGCL of 250 MW Unit # 10.

#### **Dismantling of Generator & associated components, packing and dispatch to BHEL Hardwar:**

- 1.0 Dismantling of HV bushing and bus bar extensions.
- 2.0 Grinding of terminal box to stator flange joint and opening of P/P bolts.
- 3.0 Loosening of stator foundation bolts.
- 4.0 Covering of the stator all openings (at both sides and bottom)
- 5.0 Lifting of stator (including coolers) with the help of EOT crane by tandem operation and placement on tailor.
- 6.0 Terminal box lifting.
- 7.0 Packing and loading on tailor for dispatch of following items:
  - a) Both side end shields
  - b) Terminal box
  - c) HV bushings and Bus bar extensions
  - d) Insert cover, gas baffle ring etc.

#### **Generator assembly after receipt of materials:**

- 1.0 Unloading of stator, rotor, end shields, terminal box, HV bushings & bus bar extension, insert cover, gas baffle ring etc from trailer and preparation for assembly.
- 2.0 Stator placement on its foundation.
- 3.0 Centering/elevation setting of stator. Gravel filling in foundation bolt sleeves.
- 4.0 Terminal box placement and tightening/welding with stator.
- 5.0 End shield blue matching w.r.t stator.
- 6.0 Stator/rotor cleaning, inspection and assistance during electrical testing prior to rotor insertion.
- 7.0 Gen. rotor coupling face run-out, radial run-out and relevant dimensional check with respect to bearing, oil catcher, seal body. Correction of axial run-out (if reqd).
- 8.0 Rotor threading, rotor load transfer on bearings, air gap and magnetic center adjustment.
- 9.0 Generator assembly including HV bushings, flexible and bus bar extension.
- 10.0 Connection of all gas, water and oil pipelines to stator/coolers/end shields.

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter – III:

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- 11.0 LP/Gen rotor alignment, reaming /honing of coupling holes (if reqd) and coupling.
- 12.0 Assembly of seal body, oil catchers and bearing box-up on both sides.(including replacement of H2 seals, bearings, oil catcher fins)
- 13.0 Bearing no 4 box-up. Side pad/yoke key clearance setting. Pedestal oil guard clearance setting.
- 14.0 LP gland boxes centering.
- 15.0 Exciter assembly and Gen/Exciter rotor alignment, coupling and swing check.
- 16.0 Exciter cooler positioning. Exciter hood placement.
- 17.0 Oil flushing, normalizing of seal oil and lub oil lines.
- 18.0 Assistance for C&I works.
- 19.0 Bearing no 1 to 4 inspection including repair/ replacement, as reqd:
  - 1.0 Bearing no 1,2,3 pedestal cover removal.
  - 2.0 Bearing no 1,2,3 Yoke and side pad removal. Turbine float checking.
  - 3.0 Bearing top and bottom half removal after relevant clearances checking.
  - 4.0 Bearing DPT and positioning after inspection.
  - 5.0 Bearing box-up. Float check.side pad and yoke key clearance correction.
  - 6.0 After turbovisiory work pedestal box-up.
  - 7.0 Pedestal oil guard clearance setting.
- 20.0 M/c on Barring gear.
- 21.0 Generator air tightness test and filling of CO2/H2 gas.
- 22.0 Assistances during commissioning activities till full loading.
- 23.0 Final painting (Including supply) of Stator , End shield & Exciter enclosure
- 24.0 Any other activity required for completion of the Job but not specifically mentioned in these Tech. Specs.

It is to be specifically noted that:

- (1) Contractor shall make complete arrangements for unloading of generator on its foundation by EOT crane through tandem operation.

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter – III:

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**VOID**

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter – IV: T&Ps & Consumables to be provided by Contractor

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### **4.0 A: TOOLS AND TACKLES, MEASURING AND MONITORING DEVICES:**

#### 4.1

The contractor shall provide all (excepting those indicated in BHEL scope) required tools and plants, monitoring and measuring devices (MMD) and handling & transportation equipments for the scope of work covered under these specifications. Please refer relevant appendix for the list of T&P being provided by BHEL free of charges on sharing basis.

#### 4..2

All tools and tackles to be deployed by the contractor for the work shall have the prior approval of bhel engineer with regard to brand, quality and specification. Indicative list of major T&P to be arranged by the contractor has been furnished in relevant appendix. Contractor shall also mobilize all other T&P necessary for timely and satisfactory completion of the work in scope.

#### 4.3

Timely deployment of adequate quantity of T&P is the responsibility of the contractor. The contractor shall be prepared to augment the T&P at short notice to match the planned programme and to achieve the milestones.

#### 4..4

Contractor shall maintain and operate his tools and plants in such a way that major breakdowns are avoided. In the event of major breakdown, contractor shall make alternative arrangements expeditiously so that the progress of work is not hampered.

#### 4.5

In the event of contractor failing to arrange the required tools, plants, machinery, equipment, material or non-availability of the same owing to breakdown, bhel will make the alternative arrangement at the risk and cost of the contractor.

#### 4.6

The T&P to be arranged by the contractor shall be in proper working condition and their operation shall not lead to unsafe condition. The movements of cranes, and other equipment should be such that no damage / breakage occurs to foundations, other equipments, material, property and men. All arrangements for the movement of the T&P etc shall be the contractor's responsibility. The necessary test certificates for equipments to be submitted.

#### 4.7

Use of welding generators/ rectifiers for welding only shall be permitted. Use of welding transformers will be subject to specific approval of bhel engineer.

#### 4.8

The contractor at his cost shall carry out periodical testing of his construction equipments and calibration of measuring & monitoring devices (MMD). Test/ calibration certificates shall be furnished to bhel. MMD shall be calibrated only at accredited laboratory as per the list available with bhel or any other laboratory approved by bhel.

#### 4.9

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter – IV: T&Ps & Consumables to be provided by Contractor

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Contractor shall transport BHEL'S T&P to & fro between **BHEL** stores and site. Additional loose components / sub-assemblies / attachments as and when necessary, will be issued by **BHEL**, to & fro between **BHEL** stores and site of such items shall also be done by the contractor. Assembly of such additional loose components/sub-assemblies/ attachments is in contractor's scope. Contractor shall provide all enabling services with tools and tackles for assembly/dismantling as above.

### 4.10 CONSUMABLES

The contractor shall provide all consumables for carrying out the work covered under these specifications excepting those specifically indicated as **BHEL** scope.

All consumables to be used for the work shall have prior approval of **BHEL** engineer with regard to brand and quality specifications. Test reports / certificates in respect of these consumables, wherever applicable, shall be submitted to **BHEL**

### 4.11 PRIMERS & PAINTS

Contractor shall provide primers, paints, thinner etc for all purposes for final painting

**TECHNICAL CONDITIONS OF CONTRACT (TCC)**  
**Chapter – V: T&Ps to be deployed by BHEL free of hire charges on sharing basis**

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**5.1.0 EOT CRANE FOR GENERATOR STATOR ERECTION**

BHEL/client shall provide the conventional EOT crane in TG hall for generator stator erection. Two numbers of EOT cranes shall be used in tandem operation for lifting of generator stator. The operator for EOT crane shall be arranged by contractor

**5.1.1**

Arranging suitable manpower for operation of EOT crane for erection of Turbine ,Generator & auxillaries is also included in the scope of contractor.

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter-VI: Time Schedule

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### 6.0 TIME SCHEDULE & MOBILIZATION

#### 6.1.1

The contractor shall mobilize fully within 7 days from issue of telegraphic (fax) L.O.I. or as per BHEL's instruction

**CONTRACT PERIOD FOR THIS JOB SHALL BE 35 days.**

**Commencement of Contract Period shall be marked by start of first activity as instructed and certified by Construction Manager of BHEL and Contract Completion as certified upon successful Full Load.**

#### 6.1.2

In order to meet above schedule in general, and any other intermediate targets set, to meet customer requirements, contractor shall arrange all necessary resources in accordance with **BHEL's** requirement.

### **NOTE**

**Job shall be executed by a single party at a stretch. In case if there is a break in between completion of work of Dismantling and resumption of Installation, the same shall not be compensated.**

#### 6.1.3 LIQUIDATED DAMAGE/PENALTY

**Applicable**

#### 6.1.4 DEFINITION OF WORK COMPLETION

THE CONTRACTOR'S SCOPE OF WORK UNDER THESE SPECIFICATIONS WILL BE DEEMED TO HAVE BEEN COMPLETED IN ALL RESPECT, ONLY WHEN ALL THE ACTIVITIES ARE COMPLETED SATISFACTORILY AND SO CERTIFIED BY BHEL SITE IN CHARGE. THE DECISION OF BHEL IN THIS REGARD SHALL BE FINAL AND BINDING ON THE CONTRACTOR.

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter-VII: Terms of Payment

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### 7.0 TERMS OF PAYMENT

#### 7.0.1

Release of payment in the bill will be restricted to **95% of** the value of work admitted. The remaining 5 % shall be released after completion of warrantee period .

#### 7.0.2

The payment will be released within around 30 days of submission of running bill with measurement sheets. Contractor shall make his own arrangement for making payment of impending labour wages and other dues in the meanwhile. ( Also refer cl no2.23 of GCC page no-28 for payments )

#### 7.0.3

BHEL will release payment through Electronic Fund Transfer (EFT)/RTGS. In order to implement this system, the following details are to be furnished by the Contractor pertaining to his Bank Accounts where proceeds will be transferred through BHEL's banker:

Name of the Company

1. Name of Bank
2. Name of Bank Branch
3. City/Place
4. Account Number
5. Account type
6. IFSC code of the Bank Branch
7. MICR Code of the Bank Branch

BHEL may also choose to release payment by other alternative modes as suitable.

It is to be specifically noted that the break-up given hereunder is only intended to facilitate progressive payment and does not intend to capture either the complete list of activities or the equipments. absence/ omission from specific mention here with regard to any activity and / or equipment does not absolve contractor from completing all work related to such activity and/or equipment. where such activities/ equipments fall in the category of lumpsum rate then payment of such activities/ equipments shall be covered / deemed to have been covered within the break up given for respective category. in case of activities / equipments fall in quantity based rate category then pro-rata payment will be made on actual certified quantity executed.

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter-VII: Terms of Payment

### 7.1 BILLING BREAK UP FOR LUMP SUM PRICE

SL.NO.	DESCRIPTION	SYSTEM PERCENTAGE
1	Dismantling of Components, Packing & Dispatch	20 %
2	Generator Stator lifting & placement	7%
3	Rotor insertion	3%
4	End Shield Box up (both sides)	10%
5	Seal Body assembly	5%
6	Connection of Pipelines	2%
7	Oil flushing completion	7%
8	Alignment of LP/Gen/Ex Rotors & coupling	8%
9	Bearing Box up	5%
10	Exciter placement & Box up	8%
11	Exciter cooler placement & connections of piping	5%
12	Barring Gear	3%
13	Air tightness test	5%
14	PRE-COMMG & COMMG	4%
15	Unit Synchronisation	5%
16	Full Load & Final reconciliation of material	3%
	TOTAL	100%

**Note:-**

**1) PAYMENT SHALL BE MADE MAXIMUM IN TWO RA BILLS AND FINAL BILL.**

**2) FIRST RA BILL SHALL BE RELEASED ONLY AFTER COMPLETION OF ACTIVITIES LISTED IN SL NO. 1 TO 5 ABOVE.**

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter-VIII: Taxes and Other Duties

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### 8.0 TAXES, DUTIES, LEVIES (Consolidated Rev 03 dated 09/04/2013)

#### 8.1. For All types of works excepting works covered under sl no 8.2

##### 8.1.1

The contractor shall pay all (save the specific exclusions as enumerated in this contract) taxes, fees, license charges, deposits, duties, tools, royalty, commissions or other charges which may be levied on the input goods & services consumed and output goods & services delivered in course of his operations in executing the contract. In case BHEL is forced to pay any of such taxes, BHEL shall have the right to recover the same from his bills or otherwise as deemed fit.

**However, provisions regarding Service Tax and Value Added Tax (VAT) on output services and goods shall be as per following clauses.**

##### 8.1.2 Service Tax & Cess on Service Tax

Contractor's price/rates shall be exclusive of Service Tax and Cess on Services. In case, it becomes mandatory for the contractor under provisions of relevant act/law to collect the Service Tax & Cess from BHEL and pay the same to the concerned tax authorities, such applicable amount will be paid by BHEL at the prevailing Service Tax Rate (presently 12.36 %) on the admitted bill value.

**Contractor shall submit to BHEL documentary evidence of Service Tax registration certificate specifying name of services covered under this contract. Contractor shall submit serially numbered Service Tax and Cess Invoice, signed by him or a person authorized by him in respect of taxable service provided, and shall contain the following, namely,**

1. The name, address and the registration number of the contractor,
2. The name and address of the party receiving taxable service,
3. Description, classification and value of taxable service provided and,
4. The service tax payable thereon.

**All the Four conditions shall be fulfilled in the invoice before release of service tax payment.**

**Wherever, more than one route/option are available for discharge of service tax liability under a particular service, (e.g. "works contract Service"), contractor shall obtain prior written consent from BHEL site before billing the amount towards Service Tax.**

##### 8.1.3 VAT (Sales Tax /WCT)

As regards Value Added Tax (VAT)/CST on transfer of property in goods involved in Works Contract (previously known as Works Contract Tax) applicable as per local laws, the price quoted by the contractor shall be inclusive of the same and in no case input or output VAT/CST will be reimbursed extra.

In any case the Contractor shall register himself with the respective Sales Tax authorities of the state and submit proof of such registration to BHEL along with the first RA bill. Contractor will submit all the details of VAT/CST paid for the contract in the prescribed format of the respective state VAT laws. Also, the

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter-VIII: Taxes and Other Duties

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contractor will issue the tax Invoices to BHEL as per the Tax laws of respective state on monthly basis. Contractor shall also be required to furnish to BHEL necessary proof of VAT remittance on monthly basis.

Deduction of tax at source shall be made as per the provisions of law and is to be construed as an advance tax paid by the contractor and no reimbursement thereof will be made.

Further, if BHEL, at the instance of customer or otherwise adopts the specific route for discharging output VAT liability itself, benefit of the reduction in liability of the contractor will be passed on to BHEL.

In case, BHEL is forced to pay any VAT liability on behalf of contractor, the same will be recovered from contractor's bill or otherwise as deemed fit

### 8.2 'Enabling Works'

~~The contractor shall pay all (save the specific exclusions as enumerated in this contract) taxes, fees, license charges, deposits, duties, tools, royalty, commissions or other charges which may be levied on the input goods & services consumed and output goods & services delivered in course of his operations in executing the contract. In case BHEL is forced to pay any of such taxes, BHEL shall have the right to recover the same from his bills or otherwise as deemed fit. ( i.e. rates quoted by bidder shall be inclusive of Service Tax, VAT/WCT and all other taxes and duties )~~

~~However, Since the proposed work is in the nature of 'Works Contract service' as per Service tax law, Hence, For non-corporate contractors being Individual, HUF, Proprietary Firm, Partnership Firm or Association of Persons (AOP), BHEL shall recover the applicable Service Tax under reverse charge mechanism from the contractor and remit the same with the Government as per the provisions of Law. Necessary advice/confirmation of remittance shall be issued to the contractor. The contractor shall not be eligible for any refund/reimbursement of such service tax from BHEL. It shall be the responsibility of the contractor to submit proper invoice giving all the requisite details as per Service Tax Law for the determination of the service tax liability of BHEL under reverse charge mechanism. BHEL reserves the right to determine such liability based on the invoice submitted by the contractor or otherwise independently and remittance of the same with the Government.~~

### 8.3 New Taxes/Levies

In case the Government imposes any new levy/tax on the output service/ goods/work after award of the contract, the same shall be reimbursed by BHEL at actual.

In case any new tax/levy/duty etc. becomes applicable after the date of Bidder's offer, the Bidder/Contractor must convey its impact on his price duly substantiated by documentary evidence in support of the same **before opening of Price Bid**. Claim for any such impact after opening the Price Bid will not be considered by BHEL for reimbursement of tax or reassessment of offer.

No reimbursement/recovery on account of increase/reduction in the rate of taxes, levies, duties etc. on input goods/services/work shall be made. Such impact shall be taken care of by the Price Variation/Adjustment Clause (PVC) if any. In case PVC is not applicable for the contract, Bidder has to make his own assessment of the impact of future variation if any, in rates of taxes/duties/ levies etc. in his price bid.

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter-IX General

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### 9.1.1 GENERAL REQUIREMENTS

#### 9.1.1.1

The intent of specification is to provide services according to the most modern and proven techniques and codes. The omission of specific reference to any method, equipment or material necessary for proper and efficient execution of this work shall not relieve the contractor of the responsibility of providing such facilities to complete the work without any extra compensation.

#### 9.1.1.2

The terminal points decided by BHEL should be final and binding on the contractor for deciding the scope of work and effecting payment for the work done.

#### 9.1.1.3

The work shall be executed under the usual conditions affecting major power plant construction and in conjunction with numerous other operations at site. The contractor and his personnel shall cooperate with personnel of BHEL, BHEL'S customer, customer's consultants and other contractors, coordinating his work with others and proceed in a manner that shall not delay or hinder the progress of work of the project as a whole.

#### 9.1.1.4

The work covered under this specification is of highly sophisticated nature, requiring the best quality workmanship, supervision, engineering and construction management. The contractor should ensure proper planning and successful & timely completion of the work to meet the overall project schedule. The contractor must deploy adequate quantity of tools & plants, modern / latest construction implements etc. He must also deploy adequately trained, qualified and experienced supervisory staff and skilled personnel to suit project requirement from time to time.

#### 9.1.1.5

Contractor shall erect and commission all the equipments and auxiliaries as per the sequence & methodology prescribed by BHEL depending upon the technical requirements. Availability of materials and fronts will decide this. BHEL engineer's decision regarding correctness of the work and method of working shall be final and binding on the contractor. No claims for extra payment from the contractor will be entertained on the ground of deviation from the methods / sequence adopted in erection of similar sets elsewhere.

#### 9.1.1.6

All necessary certificates and licenses, permits & clearances required to carry out this work from the respective statutory authorities including electrical inspector's clearance

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter-IX General

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for Generator stator erection are to be arranged timely by the contractor at his cost to ensure smooth progress of work.

### 9.1.1.7

The rates quoted in rate schedule shall be inclusive of welding, bolting, fastening, jointing and pre-heating, post weld heat treatments/ stress relieving, destructive/non-destructive examination (NDE) etc as applicable.

### 9.1.1.8

The work shall conform to dimensions and tolerances specified in the various drawings / documents that will be provided during various stages of erection. If any portion of work is found to be defective in workmanship, not conforming to drawings or other stipulations due to contractor's fault, the contractor shall dismantle and re-do the work duly replacing the defective materials at his cost, failing which the work will be got done by BHEL and recoveries will be effected from the contractor's bills towards expenditure incurred including cost of materials and departmental overheads of BHEL.

### 9.1.1.9

The contractor shall perform any services, tests etc. which may not be specified but nevertheless required for the completion of work within quoted rates.

### 9.1.1.10

Contractor shall collect all scrap materials periodically from his area of work site and pre- assembly area, deposit the same at the place earmarked at site or shift the same to a place earmarked in BHEL / client's stores. In case of failure of contractor in compliance of this requirement, BHEL will make suitable arrangement at contractor's risk and cost.

### 9.1.1.11

The contractor shall execute the work in the most substantial and workman like manner.

### 9.1.1.12

BHEL reserves right to recover from the contractor any loss which arises out of undue delay/ discrepancy/ shortage/ damage or any other causes due to contractor's lapse during any stage of work. Any loss to BHEL due to contractor's lapse shall have to be made good by the contractor.

### 9.1.1.13

All tools, equipment, materials, manpower, supervisors / engineers, consumables etc (except the T&P indicated in relevant appendix as free issue by BHEL) required for this scope of work shall be provided by the contractor. All expenditure including taxes and incidentals in this connection will have to be borne by him unless otherwise specified in

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter-IX General

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the relevant clauses. The contractor's quoted rates should be inclusive of all such contingencies.

### 9.1.1.14

During the course of erection, testing and commissioning certain rework / modification / rectification / repair / fabrication etc., may become necessary on account of feed back / revision of drawing. This will also include modifications / re-works suggested by BHEL / customer / other inspection group. Contractor shall carry out such rework / modification / rectification / fabrication / repair etc., promptly and expeditiously. Daily log sheets signed by BHEL engineer and indicating the details of work carried out, man-hours etc. shall be maintained by the contractor for such reworks. Claim of contractor if any, for such works will be governed by clauses 13.1 to 13.8.

### 9.1.1.15

All works such as cleaning, levelling, aligning, hot alignment, trial assembly, dismantling of certain equipments / components for checking and cleaning, surface preparation, fabrication of sheets, tubes and pipes as per general engineering practice and as per BHEL engineer's instructions at site, cutting, gouging, weld depositing, grinding, straightening, chamfering, filing, machining, chipping, drilling, reaming, scrapping, lapping, shaping fitting up, drilling of holes, making dowel pins, minor rectification of foundation bolts etc., as may be applicable in such erection works and which are treated incidental to the erection works and necessary to complete the work satisfactorily, shall be carried out by the contractor as part of the work within the quoted rates.

### 9.1.1.16

The contractor shall make all fixtures, temporary supports, steel structures required for jigs & fixtures, anchors for load and guide pulleys required for the work as scope of work.

### 9.1.1.17

The contractor shall take delivery of the components, equipments, chemicals, lubricants, H<sub>2</sub> & CO<sub>2</sub> cylinders (for turbo-generator gas filling etc) etc from the BHEL stores/ storage area after getting the approval of BHEL engineer on standard indent forms of BHEL. Complete and detailed account of the materials and equipments after usage shall be submitted to the BHEL and reconciled periodically.

### 9.1.1.18

Contractor shall plan and transport equipments, components from storage to erection site and erect them in such a manner and sequence that material accumulation at site does not lead to congestion at site of work. Materials shall be stacked neatly, preserved

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter-IX General

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and stored in the contractor's shed and at work areas in an orderly manner. In case it is necessary to shift and re-stack the materials kept at work areas/ site to enable other agencies to carry out their work or for any other reason, same shall be done by contractor most expeditiously. No claim for extra payment for such work will be entertained.

### 9.1.1.19

Plant materials should not be used for any temporary supports / scaffolding / preparing pre-assembly bed etc.

### 9.1.1.20

The details of equipments to be erected under this contract is generally as per the details of equipment and quantity given in relevant appendix. These details are approximate and meant only to give a general idea to the tenderer about the work involved. Actual quantum and type of equipments will be based on the erection drawings & documents which will be furnished in the course of erection and the weight and quantity as per the relevant engineering documents will only be admissible for the billing purpose.

### 9.1.1.21

All welded joints should be painted with anticorrosive paint immediately after completion of radiography and stress relieving works. **Necessary paints and other consumables for the above work are in the scope of the contractor.**

### 9.1.1.22

Hangers & suspensions, supports and supporting structures etc for tubes, piping, & ducts etc., will be supplied in running / random lengths / sizes which shall be cut to suitable sizes and adjusted as required.

### 9.1.1.23

Spring suspension/constant load hangers may have to be pre-assembled for required load and erection carried out as per instructions of BHEL. Adjustments, removal of temporary arrests/locks, cutting of excess thread length of hanger tie-rod etc., have to be carried out as and when required. Load setting of spring hangers, as per BHEL'S documents/ instructions, during various stages of erection & testing and after floating of piping/ducting during cold and hot condition will have to be done. This exercise may have to be repeated till satisfactory results are achieved.

### 9.1.1.29

Layout of field routed/ small bore piping shall be done as per site requirement. Necessary sketch for routing these lines should be got approved from BHEL by the contractor. There is a possibility of slight change in routing the above pipe lines even

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter-IX General

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after completion of erection. Such changes will be incidental to work hence no separate/ additional payment will be made.

### 9.1.1.25

Welding of necessary instrumentation tapping points, thermocouple pads, root valves, condensing vessels, flow metering & measurement devices, and control valves to be provided on any equipment/ piping etc covered within the scope of this specification, will also be the responsibility of the contractor and shall be done as per the instructions of BHEL site engineer. The installation of all the above items will be contractor's responsibility even if:

- a) Items are not specifically indicated under the respective product groups as given in the technical specifications.
- b) Items are supplied by any agency other than BHEL.  
NDE/NDT and post weld heat treatment for above shall be done as per the specifications and drawing requirement as part of scope of work.

### 9.1.1.26

Certain instrumentation like pressure switches, air sets, filters, regulators, pressure gauges, junction boxes, power cylinders, dial thermometers, flow meters, valve actuators, flow indicators, centrifugal/speed switches of motors, accumulators etc. are received in assembled condition as integral part of equipments. Contractor shall dismount, where instructed so, such instruments for calibration and storage/re-erection. Calibration will be done by C&I erection agency.

### 9.1.1.27

Fixing and seal welding of thermo wells & plugs before hydro test/ steam blowing/gas tightness test of equipment or other piping system is within the scope of work. These thermo wells may be supplied loose or assembled with instruments. all such cases are included in this work.

Contractor shall also remove the seal welded plugs by process of grinding and fix and seal weld thermo wells after hydro test/steam blowing of lines as part of work.

### 9.1.1.28

If the contractor or his workmen or employees break, deface, injure or destroy any part of a building, road, Krebs, fence, enclosures, water pipes, cables, drains, electric or telephone posts or wires, trees or any other property or to any part of erected equipments, stored components etc. within the project premises or outside the contractor shall make the same good at his own expenses.

### 9.1.1.29

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter-IX General

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The contractor shall have total responsibility for all equipments and materials in his custody at his stores, loose, semi-assembled, assembled or erected by him at site. He shall effectively protect the finished works from action of weather and from damages or defacement and shall also cover the finished parts immediately on completion of work as per bhel engineer's instructions. The machine surfaces/ finished surfaces should be greased and covered.

### 9.1.1.30 PRESERVATION & PROTECTION OF COMPONENTS

At all stages of work, equipments/materials in the custody of contractor, including those erected, will have to be preserved as per the instructions of BHEL. Necessary preservation agents, excepting the primer & paint, for the above work shall be provided by bhel.

#### 9.1.1.31

The contractor shall make suitable security arrangements including employment of security personnel and ensure protection of all materials/equipment in their custody and installed equipments from theft/fire/pilferage and any other damages and losses.

#### 9.1.1.32

All PG test related works like fixing and welding of thermo wells in temperature points, installation of root valves in pressure points and installation of flow elements of equipments, systems and piping covered under this tender specification shall be the responsibility of the contractor under this specification.

#### 9.1.1.33

In case the PG test is conducted during the currency of this contract, the contractor shall provide necessary manpower assistance for system isolation and normalization etc during the test. In case PG test is not conducted due to any reason not attributable to the contractor prior to the closure of this contract, then a nominal amount of lumpsum Rs 50,000.00 (rupees fifty thousand only) will be deducted from the contract value.

#### 9.1.1.39

The entire surplus, damaged, scrap, unused materials, package materials / boxes / containers, special transporting frames etc, shall be returned to BHEL stores by the contractor with proper records.

#### 9.1.1.35

The contractor shall not waste any materials issued to him. In case it is observed at any stage that the wastage/excess utilization of materials is not within the permissible limits, recovery for the excess quantity used or wasted will be affected with departmental charges from the contractor. The allowance towards such wastage shall be in line with standard engineering practices, standards/ codes as may be applicable.

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter-IX General

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Decision of BHEL on this will be final and binding on the contractor. In addition to above, there could be invisible scrap/ wastage i.e. which cannot be seen physically and lost in the process. The total of invisible scrap/ waste shall not exceed 1%.

### 9.1.1.36

The platforms of permanent nature for approaching different equipments like actuators, valves, instruments etc. As per site / bhel client's requirements, which may not be indicated in drawings, but essential for safe access, shall be made by the contractor from structural steel / materials supplied in random lengths / sizes as scope of work as per instruction of bhel engineer at site. There shall be no separate payment for fabrication of such structures/platforms. However, tonnage rate applicable for such items shall be paid for erection, alignment, welding, NDE etc. @ Rs.12, 000/-per MT.

THE CONTRACTOR'S SCOPE OF WORK IS FURTHER DESCRIBED IN THE FOLLOWING CLAUSES:

## **9.2 PREPARATION OF FOUNDATIONS, AND GROUTING OF EQUIPMENTS**

### 9.2.1

In case of any mismatch in dimensions necessitating any reduction or increase in height of centerline of Generator Rotor/ Stator, required preparatory work on Base plates shall be in Contractor's scope.

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter-X GENERATOR INSTALLATION

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### 10.0 TURBO GENERATOR INSTALLATION

#### 10.1

Turbo-generator shall be lifted by EOT cranes. Contractor shall be in scope of contractor.

- (1) Liaison and follow up with transporter. Assistance in marching of trailers to unload at a suitable location near the TG building enabling lifting of equipments. This location shall be decided in consultation with BHEL engineer at site taking all aspect in to consideration.
- (2) **Arranging the EOT CRANE supplier service engineer at the time of stator loading/unloading for expert supervision till lifting & placement of stator to required / designed foundation / trailer.**

For these lifting arrangements **foundations required on ground as well as TG deck will be made by client/BHEL.**

#### 10.2

The scope of works also includes obtaining statutory clearance from electrical inspector for generator stator erection, payment of necessary fees, duties etc towards the clearance of such installations, prior to these being put to use.

#### 10.3

Contractor shall plan all his activities / operations so as to avoid any delay in loading/unloading and releasing the transporter's carriers/ trailers. Any demurrage charges on account of contractor shall be charged to him.

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter-XI PAINTING

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### **11.0 FINAL PAINTING**

#### **11.1**

Generator stator, endshield, exciter enclosure covered in this work will be supplied by respective BHEL units with one coat of primer and two coats of finish paint applied at the manufacturing shop; contractor shall apply two coats of specified finish paint on all such components/equipments (which are not insulated) after erection at site to achieve required DFT (dry film thickness).

#### **11.2**

In addition to components/equipment as above, there could be limited few without any prior protective coating. Such components shall first be thoroughly cleaned of all dirt, rust, scale, grease, oil and other surface deposits by wire brushing, scraping, washing, wiping with solvent or any appropriate method and the same being inspected and approved by BHEL followed by application of one coat of primer. Afterwards, the above parts shall be over-coated with two coats of specified paint as per application procedure prescribed by the paint manufacturer.

### **11.3 TOUCH-UP PAINTING ON DAMAGED AREAS -**

For coatings damaged up to metal surface

Surface preparation shall be carried out by manual cleaning. Minimum 6 inches adjoining area with existing coating shall be roughened by wire brushing, emery paper rubbing etc., for best adhesion of patch primer.

#### **11.4**

Painting of site-welded areas / painting of areas exposed after removal of temporary supports / touch-up painting on damaged areas of employer's structures, where inter-connection, welding / modification etc has been carried out by the bidder.

(a) clean the surface to remove flux spatters and loose rust, loose coatings in the adjoining areas of weld seams by wire brush and emery paper.

(b) painting procedure to be followed as mentioned above for touch-up painting on damaged areas.

#### **11.5**

The scope of work includes painting of colour bands, lettering, marking and signs for direction of flow/rotation, names etc of approved colours as per the standard colour codes and specifications specified in tender specification or as advised by bhel/ customer engineer at site for the equipments/components covered in these specifications.

#### **11.6**

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter-XI PAINTING

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In certain isolated instances where it is not possible to clean the equipments as explained above, cleaning by grinding might have to be resorted to. No damage to the equipment/components should be caused.

### 11.7

Surface to be painted should be free of oil and grease. It should be removed by using suitable cleaning agents including permitted solvents. Surface cleaned by chemical agent, if required, shall be treated further as prescribed in use of such cleaning agents. The contractor at his own cost shall provide all the consumables and application implements.

### 11.8

During the preparation of surface, if the shop coat is damaged by chemical cleaning or by mechanical means, contractor shall repair the same free of cost to BHEL. BHEL will make available only the primer and paints free of any charge to contractor.

### 11.9

Specified drying time shall be permitted from one to another coat.

### 11.10

This work requires working at higher altitudes from ground level to as high as 60 m and more. The work spread is also substantial involving substantial run of structures and piping. Contractor shall take sufficient precautions to ensure safe and hazard-free working condition. The ropes, ladders, scaffolding materials, clamps etc and climber used should be of appropriate quality for safe and smooth execution of work.

### 11.11

Contractor shall carry out the work in such a way that other erected equipment, structure, civil foundations and other property are not damaged. For damages in any of such cases due to lapses by contractor, BHEL shall have the right to recover the cost of such damages from the contractor.

### 11.12

Contractor shall take due care to cover/protect the equipment which are already painted while carrying out the painting of other adjacent equipment. If so happens, it shall be cleaned and repainted by the contractor without any extra charges.

### 11.13

In general, painting of structural parts and colour bands, lettering, marking of direction of flow/rotation etc will be carried out by brush painting. However, areas/equipment inaccessible for manual painting has to be painted by spray painting. The decision of BHEL engineer, in this regard, shall be final and binding on the contractor. For the purpose of spray painting, service air at one point will be made available by BHEL free of cost. Laying of air pipeline, hose and any other line required shall be done by contractor at his cost. The contractor shall provide spray equipment set.

### 11.14

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter-XI PAINTING

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The contractor shall provide all the necessary scaffolding materials, temporary structures and necessary safety devices etc, during execution of the work.

11.15

Final painting work shall be started after obtaining clearance from BHEL engineers and as per his instructions.