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TENDER SPECIFICATION

TENDER NO. BHEL/ NR/ SCT/ TEHRI/ ST. EXCITATION/ 500

FOR

Dismantling, re-erection, testing, commissioning and trial operation of SEE panels of 4 x 250 MW HEP of Tehri HEP of M/s Tehri Hydro Development Corporation, Uttarakhand.

PART I – TECHNICAL BID



**Bharat Heavy Electricals Limited
(A Govt. Of India Undertaking)
Power Sector – Northren Region,
Plot No. 25 , Sector - 16A ,
Distt. Gautam Budh Nagar, NOIDA – 201 301.INDIA**



ISO 9001-2000, ISO 14001
and OHSAS 18001 certified
company
SubContract and Purchase
Deptt.

Bharat Heavy Electricals Limited
(A Govt. Of India Undertaking)
Power Sector – Northren Region,
Plot No. 25 , Sector - 16A ,
Distt. Gautam Budh Nagar, NOIDA – 201 301.INDIA
Phone: 0091-0120-2515476 / 2515464 / 2515479
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IMPORTANT NOTE

PURCHASER OF THIS TENDER DOCUMENT IS ADVISED TO CHECK AND ENSURE COMPLETION OF ALL PAGES OF TENDER DOCUMENT AND REPORT ANY DISCREPANCY TIMELY FOR CORRECTIVE ACTION, IF ANY, TO THE ISSUING AUTHORITY BEFORE THE BIDS ARE SUBMITTED. ORIGINAL COPY OF TENDER DOCUMENT COMPLETE IN ALL RESPECTS MUST BE SUBMITTED BACK AS PART OF THE BID WITHOUT WHICH THE SAME IS LIABLE TO BE REJECTED BY BHEL.

THIS TENDER SPECIFICATION ISSUED TO:

M/S-----

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TENDER NOTICE

Sealed tenders are invited from the contractors fulfilling qualifying requirements for the works of “**Dismantling, re-erection, testing, commissioning and trial operation of SEE panels of 4 x 250 MW HEP of Tehri HEP of M/S Tehri Hydro Development Corporation, Uttarakhand**”.

TENDER NO. BHEL/ NR/ SCT/ TEHRI/ ST. EXCITATION/ 500

QUALIFYING REQUIREMENTS:

- 1.1 Tenderers should have carried out works of Pre-commissioning and commissioning of Hydro Generating sets including SEE equipment of minimum 2 units during the last seven years
- 1.2 Party should also have an average annual turnover of minimum of Rs. 15 lacs during preceding three years (2004-05, 2005-06 & 2006-07).

NOTES:

- (i) The Tender Documents comprise of following:
 - a) General Conditions of Contract
 - b) Special Conditions of Contract, Tender Notice, Project Synopsis etc.
 - c) Rate Schedule
- (ii) Tender Documents with complete details are hosted on BHEL’s web page www.bhel.com. Bidder(s) intending to participate may download the tender document from the web site. Bidder(s) downloading the tender documents from the web site, shall remit Rs.1000/- (Rupees One thousand only) in the form of crossed demand draft (non-refundable), in favour of BHEL, NOIDA along with their offer
- (iii) Bidder(s) can also purchase hard copy of tender documents from this office. Tender documents (non transferable) will be issued on all working days between 09.30 Hrs. to 12.30 Hrs within the sale period i.e. **upto 01.05.08** on payment of Rs.1,000/- (non-refundable) either in cash or by crossed demand draft in favour of BHEL, NOIDA. Request for issue of tender document should clearly indicate Tender No. and work.

- (iv) Tenders must be submitted to the undersigned (Room No. 104) at the address given above **latest by 01.05.08** before opening of technical bids commences. Technical bids shall **be opened at 15.30 Hrs. on 01.05.08**. Tenders received after the due date & time shall be liable to be summarily rejected.
- (v) Earnest Money Deposit (EMD): Refundable, Non-interest bearing **EMD of Rs 1,00,000/-** shall be deposited by Account Payee Pay Order 'OR' Demand Draft in favour of "Bharat Heavy Electricals Limited" payable at Delhi/ NOIDA. Those bidders who have already deposited ' One Time 'EMD' of Rs. 2,00,000/- with BHEL, PSNR, NOIDA need not submit EMD with the present tender.
- (vi) Tenders not accompanied with Full Earnest Money Deposit, as indicated above, will not be considered.
- (vii) All corrigenda, addenda, amendments and clarifications to this Tender will be hosted in this web page and not in the newspaper. Bidders shall keep themselves updated with all such amendments.**
- (viii) BHEL reserves the right to accept or reject any or all tenders without assigning any reason whatsoever.
- (ix) BHEL takes no responsibility for any delay/ loss of documents or correspondences sent by courier/ post.
- (x) Unsolicited rebate/ discount shall not be accepted after bid opening.
- (xi) Purchase Preference will be given to CPSUs as per Govt. Guidelines.

DGM



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DOMESTIC NOTICE INVITING TENDER

LAST DATE OF SALE : **01.05.08**
DATE OF OPENING : **01.05.08**

NIT NO. / NAME OF WORK

TENDER NO. BHEL/ NR/ SCT/ TEHRI/ ST. EXCITATION/ 500

Sealed tenders are invited from the contractors fulfilling qualifying requirements for the works of “Dismantling, re-erection, testing, commissioning and trial operation of SEE panels of 4 x 250 MW HEP of Tehri HEP of M/S Tehri Hydro Development Corporation, Uttarakhand”.

NOTES

1. Purchase Preference will be given to CPSU as per Govt. Guidelines.
2. Please visit our website at www.bhel.com for details of NIT including Qualifying Requirements.
3. Bidder(s) can download complete tender document from the BHEL website. They can also purchase hard copy of tender documents from this office on payment of Rs.1000/- (non-refundable) either in cash or by crossed demand draft I in favour of BHEL, NOIDA.

DGM

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PROCEDURE FOR SUBMISSION OF SEALED TENDERS:

The tenderers must submit their tenders as required in **two parts** in separate sealed covers **prominently superscribed as Part-I Technical bid and Part-II, Price bid** also indicating on each of the cover tender specification no., date and time as mentioned in tender notice.

TECHNICAL BID (COVER-I)

Except **Price bid Part-II**, complete set of tender document consisting of General conditions of Contract, “Technical specification & Special terms and condition” (Part-I) issued by BHEL shall be enclosed in **Part I Technical Bid only**. All schedules, data sheets and details called for in the specification shall also be submitted along with technical bid. All details/ Data/ Schedules including offer letter duly signed and stamped are to be **submitted in duplicate**.

PRICE BID (COVER-II)

Tenderers may please note that price bid is **to be submitted only in original copy** of Tender i.e. Price bid (Part-II) issued by BHEL and no duplicate copy of the same is required.

These Two separate covers i.e. cover I & II shall together be enclosed in a **third envelope (Cover-III)** and this sealed cover shall be superscribed with tender specification No., due date, time and submitted to officer inviting tender as indicated in tender notice on or before due date as indicated.

**PROJECT SYNOPSIS
TEHRI HYDRO ELECTRIC PROJECT**

M/S Tehri Hydro Development corporation (THDC) has set up 4x250 MW Tehri HEP on river Bhagirathi. Supply has been made by M/S Turbo Atom Russia. Erection, testing and commissioning (under supplier supervision) was entrusted to BHEL PSNR. All the units have been commissioned and are in operation.

The project is situated close to Tehri town in Uttarakhand and is about 82 Kms from Rishikesh via Narendra Nagar and Chamba.

SCOPE OF PSNR FOR THIS TENDER

Material handling at site, Erection and Commissioning of Static Excitation system panels.

SPECIAL CONDITIONS OF CONTRACT

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Clause	Description
34.	General
35.	Civil works, foundation and grouting
36.	Consumables
37.	Tools & Plants/ IMTE's
38.	Supervisory staff & workmen
39.	Material handling and storage
40.	Preservation of components
41.	Welding & NDT
42.	Progress reporting
43.	Drawings & documents
44.	Income tax, sales tax etc.
45.	Extra work
46.	Price escalation
47.	Rate schedule
48.	Instructions to tenderers

SPECIAL CONDITIONS OF CONTRACT-PART 'A'

34.0 GENERAL

- 34.1 The intent of this specification is to provide services for execution of project according to most modern and proven techniques and codes. The omission of specific reference to any method, equipment or material necessary for the proper and efficient services towards installation of the plant shall not relieve the contractor of the responsibility of providing such services/ facilities to complete the work or portion of work awarded to him. The quoted/ accepted rates and lumpsum price shall deem to be inclusive of all such contingencies.
- 34.2 The contractor shall carry out the work in accordance with standard practices/ codes/ instructions/ drawings/ documents/ specification supplied by BHEL from time to time.
- 34.3 The work shall conform to dimensions and tolerances given in various drawings and documents that will be provided during erection. If any portion of work is found to be defective in workmanship, not conforming to drawings or other stipulations, the contractor shall dismantle and redo the work duly replacing the defective materials at his cost failing which the job will be carried out by BHEL by engaging other agencies/ departmentally and recoveries will be effected from contractor's bills towards expenditure incurred including BHEL's usual overhead charges.
- 34.4 Following shall be the responsibility of contractor and have to be provided within finally accepted rates/ prices:
- (a) Provision of all types of labor, supervisors, Engineers, watch and ward as required, tools & tackles, calibrated inspection, measuring and test equipment as specified and otherwise required for the work and consumables for erection, testing and commissioning including material handling.
 - (b) Proper out-turn as per BHEL plan and commitment.
 - (c) Completion of work as per BHEL Schedule.
 - (d) Good quality and accurate workmanship for proper performances of equipment.
 - (e) Repair and rectification.
 - (f) Preservation/ Re-conservation of all components during storage/ erection till handing over.

34.5 BHEL-Power Sector (NR) is ISO 9001-2000 certified company. Quality of work, to customer's satisfaction and system requirements are the essence of ISO 9001-2000 certification. The contractor in all respects will organise his work, system, environment, process control documentation, T&P, inspection, measuring & testing equipment etc. as per instructions of BHEL engineer.

35.0 **CIVIL WORKS, FOUNDATIONS AND GROUTING**

35.1 Foundation for all equipment and necessary civil works shall be provided by BHEL/ CUSTOMER. The dimensions and locations of the foundations, pockets, and anchor bolt pitch shall be checked by the contractor for their correctness as per drawings. Further, top elevation of foundations shall be checked with respect to benchmark etc. All minor adjustments of foundation level, dressing and chipping of foundation surfaces upto 50mm, enlarging the pockets in foundations etc., increasing the existing floor opening for cable entry, fixing panels and repair of same as may be required for the erection of equipment / plants shall be carried out by the contractor.

35.2 While on the job, care is essential to avoid too much chipping and resultant lowering of level. In case of excess chipping, contractor is to arrange additional packing plates as per requirements provided it is allowed by BHEL Engineer. The embedded subsole plates shall be corrected and checked with Prussian blue to get the required level and contact with frames.

35.3 The contractor shall ensure perfect matching of structure/ equipment, packer plates including machining, scraping and blue matching with foundation by dressing the foundation. BHEL at its discretion can accept rough chipping of foundations, embedding packer plates in cement mortar

35.4 NA

35.5 Besides as above any civil works required for safe and efficient operation of tools and tackles like grouting/ excavation/ casting of foundation/ anchor points for derricks, winches, guy ropes fastening, etc. any other temporary supports shall also be the contractor's responsibility. For these civil works all materials including cement and required facilities will have to be arranged by contractor at his own cost.
(CLAUSE NOT APPLICABLE)

35.6 All the matching joints which are not to be grouted shall be kept free from the grouting mixture by applying tape or any other alternative method approved by Engineer. **(CLAUSE NOT APPLICABLE)**

35.7 NA

35.8 NA

36.0 CONSUMABLES

- 36.1 The contractor shall provide within finally accepted price/rates, all consumables like gaskets for temporary work, gland packing, all welding electrodes, TIG filler wires, grouting materials, paints, all inert/ welding gases, soldering material, dye penetrates, other erection consumables such as tapes, jointing compound, grease, mobile oil, M-seal, Araldite, petrol, CTC/ other cleaning agents, petroleum jelly, insulation tape, PVC sealing compound, sleeves, cable-ties, copper/ teflon washers for instrument installations, gaskets and shims, wooden sleepers, steel required for temporary works such as supports, packing, hardware items, sealing compound etc., required for completion of work except those which are specifically supplied by manufacturing unit.
- 36.2 It shall be the responsibility of the contractor to plan the activities and store sufficient quantity of consumables. Non-availability of any consumable materials or equivalent suggested by BHEL cannot be considered as reason for not attaining the required progress or for additional claim.
- 36.3 It shall be the responsibility of the contractor to obtain prior approval of BHEL, regarding suppliers, type of electrodes etc. before procurement of welding electrodes/ TIG wires. On receipt of electrodes at site these shall be subjected to inspection and approval by BHEL. The contractor shall inform BHEL details regarding type of electrodes, batch No., date of expiry etc. and produce test certificate for each lot/ batch with correlation of batch/ lot no., with respective test certificate. No electrode will be allowed to be used without valid test certificate.
- 36.4 BHEL reserves the right to reject the use of any consumable including electrodes, gases, lubricants / special consumables if it is not found to be of the required standard/ make/ purity or when shelf life has expired. Contractor shall ensure display of shelf life on consumable wherever required and records maintained.
- 36.5 In case of improper arrangement for procurement of any consumable, BHEL reserves the right to procure the same from any source and recover the cost from the Contractor's first/ subsequent bill at market value plus the departmental charges of BHEL from time to time (30% at present). Postponement of such recovery is normally not permitted. The decision of Engineer in this regard shall be final and binding on the Contractor.
- 36.6 All lubricant and chemicals required for testing, commissioning and trial runs of the equipment shall be supplied by BHEL/ CUSTOMER. All

services including labor and T&P will be provided by the contractor for handling, filling, emptying, refilling etc. The consumption of lubricants/chemicals shall be properly accounted for. Surplus material if any shall be properly stacked and returned to stores.

36.7 Storage of all consumables including welding electrodes shall be done as per requirement/ instruction of the Engineer by the contractor at his cost.

37.0 TOOLS AND PLANTS/ IMTE's

37.1 T&P being provided by BHEL to sub-contractor free of hire charges shall be shared by other sub contractors working for BHEL at site and the allotment done by BHEL Engineer shall be final and binding.

37.2 Besides the T&P being made available to contractor free of hire charges by BHEL, all other T&Ps and IMTEs which are required for successful and timely execution of the work covered within the scope of this tender, shall be arranged and provided by the contractor at his own cost in working condition. In the event of the failure of contractor to bring necessary and sufficient T&Ps/ and IMTEs, BHEL will be at liberty to arrange the same at the risk and cost of contractor and hire charges as applicable shall be deducted from contractor's bill. Decision of BHEL in this regard shall be final and binding on contractor.

37.3 All distribution boards, connecting cables/ welding cables, wire ropes, hoses etc. including temporary air/ water/ electrical connections etc. shall have to be arranged by the contractor at his own cost.

37.4 In case of non-availability of the T&Ps to be provided by BHEL due to breakdown, major overhauls, distribution pattern or any other reason, the contractor shall plan/ amend/ alter his activities to meet erection/ commissioning targets in consultation with BHEL.

37.5 The operation of all BHEL's T&P being provided free of hire charges shall be in the scope of the contractor. The contractor shall arrange at his own cost trained operators, fuel and other consumables for the operation. All lubricants shall be provided by BHEL free of cost for which the contractor will give the requirement well in advance.

37.6 The contractor shall engage trained and experienced operators for the operation of BHEL's T&Ps. Their skill/ performance will be checked by BHEL Engineer before they are allowed to operate the same. However checking of skills by BHEL does not absolve contractor of his responsibilities for proper and safe handling of equipment, consistent good performance and regular performance evaluation of operators.

- 37.7 The day to day and routine maintenance of BHEL's T&Ps should be carried out by contractor as per manufacturer's/ BHEL's maintenance schedule at his cost. These shall be maintained in good working condition during the entire period of use. T&Ps in defective/ damaged condition shall be rectified promptly to the full satisfaction of BHEL engineer. Contractor shall maintain records for maintenance of major T&Ps which shall be made available for Inspection whenever required. In case of any lapses on the part of the contractor BHEL at its own discretion get the servicing/ repair of equipment done at the risk and cost of the contractor with BHEL overheads.
- 37.8 The contractor shall arrange at his cost all spares needed for upkeep of all T&Ps other than cranes supplied by BHEL. For cranes, repair/ replacement of filter, batteries, self, dynamo, gaskets, hoses, oil seals and rubber parts shall be the responsibility of the contractor. However, the charges of the replacement of the other damaged/ worn out parts of BHEL cranes will be borne by BHEL provided the damage is not due to the negligence of the contractor. However, if there are breakdowns/ damages due to negligence of the contractor, the complete service/ repair charges and cost of all the spares damaged with BHEL overheads shall be to the account of contractor and shall be recovered from his RA bills.
- 37.9 Supervision and labor required for maintenance and attending breakdowns shall be arranged by the contractor at his own cost. Specialist supervision shall be arranged by BHEL as assessed by BHEL Engineer.
- 37.10 Increasing/ shortening of the crane boom to suit work requirements shall have to be arranged by the indenting contractor at his cost. All necessary manpower, tools, support, consumables, illumination etc. will have to be arranged by contractor at his cost.
- 37.11 Consolidation of ground and arrangement of sleepers/ sand bag filling etc. for safe operation/ movement of equipment including cranes/ trailers etc. shall be the responsibility of the contractor at his cost.
- 37.12 In the event of contractor not using and maintaining BHEL T&Ps and IMTEs according to BHEL's instructions, BHEL will have the right to withdraw such item without any notice and no claim in this regard shall be entertained and contractor shall be responsible for delay in execution on this account.
- 37.13 Regular utilisation report of the BHEL T&Ps as per requirement of BHEL shall be furnished by the contractor.
- 37.14 Any loss/ damage to any part of BHEL T&Ps shall be to the contractor's account and any expenditure on these accounts by BHEL will be

recovered from the contractor's bill in case the contractor fails to make good the loss.

- 37.15 It shall be responsibility of the contractor to take delivery of T&Ps and IMTEs from stores or place of use by other contractor at project site, transport the same to site and return the same to BHEL store/ place as intimated by BHEL Engineer in project site in good working conditions after use.
- 37.16 The contractor shall return BHEL T&Ps and IMTEs issued to him in good working condition as and when desired by BHEL (on completion or reduction of work load). If return of T&P and IMTEs is delayed by contractor, hire charges as applicable shall be levied by BHEL from time, it was requisitioned till the time of actual return. Hire charges shall also be charged on the T&P and IMTEs returned in damaged/ unserviced condition to BHEL till its satisfactory repair. T&Ps and IMTEs returned in damaged/ unserviced condition shall be got repaired by BHEL at its own discretion and entire cost of repair with BHEL overheads shall be recovered from the contractor.
- 37.17 Replacement cost including BHEL overheads in respect of irreparable/ completely damaged/ non return of T&Ps and IMTEs shall be recovered from the contractor's running bills.
- 37.18 Contractor shall ensure deployment of serviced and healthy T&Ps including cranes, lifting tackles, wire ropes, Manila ropes, winches and slings etc. History card and maintenance records for major T&Ps will be maintained by the contractor and will be made available to BHEL Engineer for inspection as and when required. Identification for such T&Ps will be done as per BHEL Engineer's advice.
- 37.19 Contractor shall ensure deployment of reliable and calibrated IMTEs (Inspection measuring and Test equipment). The IMTEs shall have test/ calibration certificates from authorised/ Govt. approved/ accredited agencies traceable to National/ International standards. Each IMTE shall have a label indicating calibration status i.e. date of calibration, calibration agency and due date for calibration. A list of such instruments deployed by contractor at site with its calibration status is to be submitted to BHEL Engineer for control.
- 37.20 Re-testing/ re-calibration shall also be arranged at regular intervals during the period of use as advised by BHEL Engineer with in the contract price. The contractor will also have alternate arrangements for such IMTE so that work does not suffer when the particular instrument is sent for calibration. Also if any IMTEs not found fit for use, BHEL shall have the right to stop the use of such item and instruct the contractor to deploy proper item and recall i.e. repeat the readings taken by that

instrument, failing which BHEL may deploy IMTEs and retake the readings at contractor's cost.

37.21 BHEL shall have lien on all T&PS, IMTEs & other equipment of the Contractor brought to the Site for the purpose of erection, testing and commissioning. BHEL shall continue to hold the lien on all such items throughout the period of Contract. No material brought to the Site shall be removed from the site by the Contractor and/ or his Sub-contractors without the prior written approval of the Engineer.

37.22 The monthwise T&P deployment plan to be submitted as per format (at Annexure-D to general conditions of contract) is only to assess the capability as well as understanding of the contractor to execute the work. It shall be the contractor's responsibility to deploy the required T&P, for timely and successful completion of the job, to any extent over and above those indicated in the above deployment plan (including those which are not covered in the plan submitted) without any compensation on this account.

38.0 SUPERVISORY STAFF AND WORKMEN

38.1 The contractor shall deploy all the skilled workmen like mill Wright fitters, welders, gas cutters, riggers, sarangs, masons, carpenters, electricians, instrument technician etc., in addition to other skilled, semi-skilled and unskilled workmen required for all the works of handling and transporting from site storage to erection site, erection, testing and commissioning as contemplated under these specification. Only fully trained and competent men with previous experience on the job shall be employed. They shall hold valid certificates wherever necessary. BHEL reserves the right to decide on the suitability of the workers and other personnel who will be deployed by the contractor. BHEL reserves the right to ask for removal of any employee workman of the contractor at any time, if they find him unsuitable and the contractor shall forthwith remove him.

38.2 The supervisory staff including qualified Engineers deployed by the contractor shall ensure proper out-turn of work and discipline on the part of the labor put on the job by the contractor and in general see that the works are carried out in a safe and proper manner and in coordination with other labor and staff deployed directly by BHEL or other contractors of BHEL or BHEL's client/ other agency.

38.3 The contractor shall deploy the necessary number of qualified and approved full time electricians at his cost to maintain his temporary electrical installation till the completion of work.

- 38.4 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 other personnel/ contractor, coordinating his work with others and proceed in a manner that shall not delay or hinder the progress of work as a whole.
- 38.5 The contractor's supervisory staff shall execute the work in the most substantial and workman like manner in the stipulated time. Accuracy of work and aesthetic finish are essential part of this contract. The contractor shall be responsible to ensure that assembly and workmanship conform to the dimensions and tolerances given in the drawings/ documents/ instructions given by BHEL Engineer from time to time.
- 38.6 During the course of erection, if the progress is found unsatisfactory, or if the target dates fixed from time to time for every mile stones are to be advanced or in the opinion of BHEL, if it is found that the skilled workmen like fitters, electricians, operators, technicians etc. deployed are not sufficient, BHEL after giving reasonable opportunity to the contractor, will induct on the work the required workmen in addition to contractor's workmen to improve the progress and recover from the contractor's bills any charges incurred for engaging the additional workmen with overheads.
- 38.7 It is the responsibility of the contractor to engage his workmen in shifts or on overtime basis for achieving the targets set by BHEL and also during the period of commissioning and testing of unit. The contractor's finally accepted rates / prices shall include all these contingencies.
- 38.8 If the contractor or his workmen or employees shall break, deface, injure or destroy any part of a building, road kerb, fence, enclosure, water pipes, cables, drains, electric or telephone posts or wire, trees or any other property or to any part of erected components etc., the contractor shall make the same good at his own expense or in default, BHEL may cause the same to be made good by other workmen or by other means and deduct the expenses (of which BHEL's decision is final) from any money due to the contractor.
- 38.9 The monthwise manpower deployment plan to be submitted as per format (at Annexure-C to general conditions of contract) is only to assess the capability as well as understanding of the contractor to execute the work. It shall be the contractor's responsibility to deploy the required manpower, for timely and successful completion of the job, to any extent over and above those indicated in the above deployment plan (including those which are not covered in the plan submitted) without any compensation on this account. Separate persons shall be identified at site for quality control and safety by the contractor.

39.0 MATERIAL HANDLING AND STORAGE

- 39.1 All the equipment furnished under this contract, except those which are mentioned specifically in the scope of work, shall be received in the project stores, sheds/ storage yards (customer scope) and stored in the storage spaces in a manner so that they are easily retrievable till they are erected by the contractor. While drawing/ lifting material from BHEL/ customer stores, contractor shall ensure that the balance / other materials are stacked back immediately.
- 39.2 Contractor will endeavor to store/ stack/ identify materials properly in open/ close/ semi closed/ tarpaulins covered storage yard/ shed at erection site, it shall also be contractor's responsibility to assist BHEL in identifying materials well in time for erection, taking delivery of the same, following the procedure indicated by BHEL, and transport the material safely to pre-assembly yard/ erection site and erect in time, according to approved program.
- 39.3 The contractor shall take delivery of components, equipment/ consumables from storage area after getting approval of BHEL Engineer on standard indent forms.
- 39.4 The contractor shall identify and deploy necessary Engineers/ supervisors/ workmen for the above work in sufficient number as may be needed by BHEL, for areas covering their scope.
- 39.5 DELETED
- 39.6 All the equipment shall be handled very carefully to prevent any damage or loss. No untested wire ropes / slings etc. shall be used for unloading/ handling. The equipment shall be properly protected to prevent damage either to the equipment or to the floor where they are stored. The equipment from the stores shall be moved to the actual location at the appropriate time so as to avoid damage of such equipment at site.
- 39.7 Contractor shall ensure that while lifting slings shall be put over the points indicated on the equipment or as indicated in the manufacturer's drawings. Slings/ shackles of proper size shall be used for all lifting and rigging purposes. All care shall be taken to safe guard the equipment against any damage. In no case piping should be dragged. In case of any damage the cost shall be recovered from the contractor.
- 39.8 Approach road conditions from the stores/ yards to the erection site may not be equipped and ideal for smooth transportation of the equipment. Contractor may have to be adequately prepared to transport the materials under the above circumstances without any extra cost.
(CLAUSE NOT APPLICABLE)

- 39.9 Contractor shall be responsible for examining all the plant and material issued to him and notify the Engineer immediately of any damage, shortage, discrepancy etc. before they are moved out of the stores/ storage area. The contractor shall be solely responsible for any shortages or damages in transit, handling, storage and erection of the equipment once received by him. As the erection work will be spread in different areas/ locations of the project, contractor has to arrange sufficient no. of watch/ ward personal to avoid any pilferage of material under his custody. As per General Conditions of contract under provisions of clause No 29 BHEL will reserve the right to recover the cost of repair/ replacement, if any, to bring back the equipment in original order, in case the equipment/ material is lost/ damaged while in the custody of the contractor. BHEL's decision in this regard shall be final and binding on the contractor.
- 39.10 The contractor shall maintain an accurate and exhaustive record detailing out the list of all equipment received by him for the purpose of erection and keep such record open for the inspection of the engineer at any time.
- 39.11 All the material in the custody of contractor and stored in the open or dusty locations must be covered with suitable weather proof / fire retardant covering material wherever applicable and shall be blocked up on raised level above ground. All covering materials including blocks and sleeper shall be arranged by the contractor at his cost.
- 39.12 The contractor shall be responsible for making suitable indoor storage facilities to store all equipment (drawn by the contractor from BHEL/ customer stores) which require indoor storage till the time of their installation. The Engineer will direct the contractor in this regard, which item in his opinion will require indoor storage, and the contractor shall comply with Engineer's decision
- 39.13 If the material belonging to the contractor are stored in area other than those earmarked for his operation the engineer will have the right to get it moved to the area earmarked for the contractor at the contractors risk and cost.
- 39.14 The contractor shall ensure that all surplus/ damaged/ scrap/ unused material, packing wood/ containers/ special transporting frames etc. are returned to BHEL at a place in project area identified by the Engineer. An account will be maintained by the contractor for all such items received and returned to BHEL.
- 39.15 The contractor shall hand over all parts/ materials remaining extra over the normal requirement with proper identification tags to the concerned

BHEL/ customer stores or at a place in project area as directed by BHEL Engineer.

40.0 PRESERVATION OF COMPONENTS

40.1 After taking delivery from BHEL/ customer's stores, plant materials storage shall be subjected to the following protection besides other provisions indicated in these specifications elsewhere.

- a) Items stored outdoors shall be blocked up at least six inches (6") off the ground
- b) Motors, valves, electrical equipment, control equipment and instruments etc. shall be stored indoors in warehouse provided by contractor. Motor windings shall be kept dry by use of external heat or space heaters.
- c) Bearings and other wearing surfaces of plant materials shall be protected against corrosion and kept clean.

40.2 It shall be the responsibility of the contractor to apply preservatives/ touch up paints (primer) on equipment handled and erected by him till such time of final painting. It shall be contractor's responsibility to arrange for required paints (Primer), thinners, labor, scaffolding materials, cleaning materials like wire brush, emery sheets, etc., cleaning of surface and provide one coat of preservatives/ paints (primer) from time to time as decided by BHEL engineer. The accepted rate shall include this work also. It is to be noted that such painting may have to be done as and when required till such time the final painting is carried out.

40.3 The contractor shall effectively protect the finished work from action of weather and from damage or defacement and shall cover the finished parts then and there for their protection.

40.4 Any failure on the part of contractor to carry out works according to above clauses will entail BHEL to carry out the job from any other party and recover the cost from contractor.

41.0 WELDING and NDT

41.1 The method of welding (ARC, gas, TIG or other method) may be indicated in the detailed drawings/ schedule. BHEL Engineer will have option of changing the method of welding as per site requirements.

41.2 All welders including tack welder, structural and pipe welder shall be tested and approved by BHEL Engineer before they are actually engaged on work. BHEL reserves the right to reject any welder if the welder's performance is not found to be satisfactory. All charges for

testing of contractor's welders including destructive and non-destructive tests conducted by BHEL at site or at laboratory shall have to be borne by the contractor only. The test coupons raw material will be supplied by BHEL free of cost

- 41.3 Engineer may stop any welder from the work if his performance is unsatisfactory for any technical reason or if there is a high percentage of rejection of joints welded by a particular welder which, in the opinion of the Engineer will adversely affect the quality of the welding though the welder has earlier passed the tests prescribed by Engineer. The welder's having passed qualification tests does not absolve the contractor of contractual obligation to continuously check the welder's performance.
- 41.4 Faulty welds shall be cut and re-welded by the contractor at his own expenses. The procedure for the repair of defective welds shall be approved by the Engineer prior to any repair being made. Record for such repair and defects shall be maintained by the contractor as per BHEL's engineer advice
- 41.5 The regulators used on welding machines shall be calibrated before putting these into use for work. Periodic calibration for the same shall also be arranged by the Contractor at his cost.
- 41.6 Only **BHEL/ Customer approved electrodes and filler wire** will be used. All electrodes shall be baked and dried in the electric electrode-drying oven to the required temperature for the period specified by the Engineer before these are used in erection work. All welders shall have electrodes drying portable oven at the work spot. The electrodes brought to the site will have valid manufacturing test certificate. The test certificate will have co-relation with the lot No./ batch No given on electrode packets. No electrodes will be allowed to be used in the absence of above requirement. The thermostat and thermometer of electrode drying oven will be also calibrated and test certificate from Govt. approved/ accredited test house traceable to National/ International standards will be submitted to BHEL before putting the oven in use. Periodical calibration for the same shall also be arranged by the contractor within the finally accepted rates.
- 41.7 All welds shall be painted with anticorrosive red oxide paint. Necessary consumables and scaffolding etc. including paints shall be provided by contractor at his own cost.
- 41.8 Non-destructive testing is part of erection work and shall be carried out by the contractor in accordance with the quality plan and as per instruction of BHEL Engineer. Decision of Engineer shall be final and binding on the contractor.

42.0 PROGRESS REPORTING

- 42.1 Contractor is required to draw mutually agreed monthly erection programs in consultation with BHEL well in advance. Contractor shall ensure achievement of agreed program and shall also timely arrange additional resources considered necessary at no extra cost to BHEL
- 42.2 Weekly progress review meetings will be held at site during which actual progress during the week vis-a-vis scheduled program shall be discussed for actions to be taken for achieving targets. The program for subsequent week shall also be presented by contractor for discussions. The contractor shall constantly update/ revise his work program to meet the overall requirement. All quality problems shall also be discussed during above review meetings. Necessary preventive and corrective action shall be discussed and decided upon in such review meetings and shall be implemented by the contractor in time bound manner so as to eliminate the cause of non-conformities.
- 42.3 The contractor shall submit daily, weekly and monthly progress reports, manpower reports, materials reports, consumables (gases/ electrodes) report and other reports as per Performa considered necessary by the Engineer.
- 42.4 The progress report shall indicate the progress achieved against planned, with reasons indicating delays, if any, and shall give the remedial actions which the contractor intends to take to make good the slippage or lost time, so that further works again proceed as per the original program and the slippage's do not accumulate and effect the overall program.
- 42.5 The daily manpower reports shall clearly indicate the manpower deployed, category wise specifying also the activities in which they are engaged.

43.0 DRAWING AND DOCUMENTS

- 43.1 The detailed drawings, specifications available with BHEL engineers will form part of this tender specification. These documents will be made available to the contractor during execution of work at site. The contractor will also ensure availability of all drawings/ documents at work place.
- 43.2 Necessary drawings to carry out the erection work will be furnished to the contractor by BHEL on loan, which shall be returned to BHEL at site after completion of work. Contractor shall ensure safe storage and quick retrieval of these documents.

- 43.3 The contractor shall maintain a record of all drawings and documents available with him in a register as per format given by BHEL Engineer. Contractor shall ensure use of pertinent drgs./ data/ documents and removal of obsolete ones from work place and returning to BHEL.
- 43.4 The data furnished in various annexures enclosed with this tender specification are only approximate and for guidance. However, the change in the design and in the quantity may occur as is usual in any such large scale of work.
- 43.5 Should any error or ambiguity be discovered in the specification or information the contractor shall forthwith bring the same to the notice of BHEL before commencement of work. BHEL's interpretation in such cases shall be final and binding on the contractor.
- 43.6 Deviation from design dimensions should not exceed permissible limit. The contractor shall not correct or alter any dimension / details, without specific approval of BHEL.

44.0 INCOME TAX, SALES TAX, VAT ETC.

- 44.1 **TDS under Income Tax, Sales Tax, VAT etc**, if any, shall be deducted at prevailing rates on gross invoice value from the running bills unless Exemption Certificate from appropriate Authority/ Authorities is furnished.
- 44.2 **Price quoted shall be inclusive of all taxes except service tax.** The service tax, as legally leviable & payable by the contractor under the provisions of applicable law/ act, shall be paid by BHEL as per contractor's bill. However, contractor shall have to submit proof of service tax deposited by them immediately after the deposit but not later than the next bill submitted after the due date of deposit. The contractor shall furnish proof of Service Tax registration with Central Excise Division covering the services covered under this contract. Registration should also bear endorsement for the premises from where the billing shall be done by contractor on BHEL for this project The contractor shall obtain prior approval of BHEL before billing the service tax amount.

With introduction of Cenvat credit rules 2004 which came into force w.e.f. 10.09.2004, excise duty paid on input goods including capital goods used for providing the output service and service tax paid on input service can be taken credit of against the service tax payable on output service. **As such, while offering the rates, the contractors may take into account the benefit of above provisions as the cost of input to contractors will be the cost net of excise duty and service tax and adjust their offer price accordingly to make it more competitive.**

- 44.3 In VAT applicable States, "Tax Invoice" if required under the relevant State VAT law shall be submitted alongwith other compliances as per concerned VAT Act.
- 44.4 Contractor shall get his organization registered with concerned sales tax/VAT authorities within 15 days of award of this contract, if applicable. The delay on this account and delay in bringing the material shall be to contractor's account and no extension of time shall be allowed on this account. The sales tax/ VAT registration for this contractor shall be forwarded to BHEL within 30 days from the date of LOI. In case the contractor is already registered for sales tax/ VAT with Govt. Authorities he must quote his registration no, while submitting their tender.
- 44.5 Contractor has to make his own arrangement at his cost for completing the formalities, if required, with Sales Tax/ VAT Authorities, for bringing their materials, plants, and equipment at site for the execution of the work under this contract.
- 45.0 **EXTRA WORK:**
- 45.1 BHEL may consider for payment of extra works on manhour basis @ Rs.30/- (Rupees thirty only) per man-hour only for such of those works which:
- a. Require major revamping or rework and which are totally unusual to normal erection work.
 - b. Require rectification/ modification for improvement in the design during commissioning,
 - c. Requiring fresh fabrication of components in place of rejected/ replaced components.
- 45.2 The rates indicated as above, shall include over time, if any, consumables, supervision, use of tools and tackles and other site expenses and incidentals.
- 45.3 The extra works, if any, shall be carried out by a separate gang, which can be identified for certification of man-hours. Logbook should be maintained and should be signed jointly by the contractor's representative and the BHEL Engineer on day-to-day basis. However, signing of the logbook does not necessarily mean acceptance of the extra works, which would be identified by Engineer whether work is covered in one of the above categories. Only those works and man-hours, which are certified by the BHEL Engineer-in-charge, will be considered for payment. The decision of BHEL in this regard shall be final and binding on the contractor.
- 46.0 **PRICE ESCALATION**

Price escalation is not applicable and rates shall remain firm.

47.0 RATE SCHEDULE

- 47.1 Contractor shall fully understand equipment description and scope of work before quoting. The scope of work and responsibility of the contractor as mentioned under these specifications shall be covered within the quoted rates and price.
- 47.2 The tenderer shall quote the rates as per the rate schedule only, in part II price bid (Original). Conditional price bids or price bids with any deviation/ clarification etc. are liable to be rejected. No cutting/ erasing/ over writing shall be done.
- 47.3 Contractor's total quoted price as per rate schedule will be taken as tentative only. The contractor undertakes to erect/ commission actual quantities as per advise of BHEL Engineer and accordingly the final contract value shall be worked out on the basis of quantities actually erected at site and payments will also be regulated for the same. The contractor confirms that unit rates quoted above take care of such variation during execution stage.

48.0 INSTRUCTIONS TO TENDERER

- 48.1 Offers received without data/ information required to be submitted under tender clauses-11.1 to 11.11 are liable to be rejected. All these data/ information should be duly supported by documentary evidences (Refer note below clause-11)
- 48.2 No deviations to the tender conditions will normally be accepted.
- 48.3 The tenderers are advised to actually visit the site and fully acquaint themselves with site conditions, location of stores, transportation routes, quantum of work etc. before quoting their rates for this work. BHEL shall not be responsible in any way for non-familiarization of site conditions. Once the tenderer has quoted for the work, it is implied that he has ascertained various site condition and NO CLAIM whatsoever will be entertained by BHEL on any such account.
- 48.4 The contractor in the event of this work awarded to him, shall establish a site office at site and keep posted an authorised responsible officer who should hold a valid power of attorney for the purpose of the contract. Any or deror instruction of the Engineer or his duly authorised representative shall be communicated to the contractor's representative at site office and the same will be deemed to have been communicated to the contractor at his legal address.

48.5 Rates quoted by bidders shall be inclusive of all associated jobs of Fabrication, supporting terminations, flexible conducting, sealing of openings, grouting, touchup paintings, tags, markers, cable ties, clamps, phase coloured discs, ferrules etc., and as indicated in tender specifications.

SPECIAL CONDITIONS OF CONTRACT

PART-B

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SPECIAL CONDITIONS OF CONTRACT

PART-B

49.0 SCOPE OF WORK

49.1 Scope of these specifications cover complete work of Dismantling of existing panels, dumping of packing, scrap, dismantled items, receipt of materials sent by BHEL Units, Unloading, handling, storage at erection site, preservation, watch and ward, periodic checking, chipping and leveling of foundations if necessary, pre-assembly, erection, calibration, alignment, welding, NDT wherever required, finish/ touch up painting including supply of paints etc., including other activities required for erection, testing, commissioning, post commissioning, trial operations & handing over of all equipment and items indicated in the BOQ cum rate schedule (Price bid) for 4 x 250MW HEP of Tehri HEP of THDC.

Note: - The work will be awarded initially for 2 units. However BHEL reserves the right to place order for additional two units on same terms and conditions within one year of completion of work of initial two units. The bidder shall give their acceptance specifically for the same.

49.2 The contractor shall also provide service of one skilled and one semiskilled persons for exclusive use of BHEL for a total period of 6 man months free of cost for maintaining test records, computer/ typing work, Guest house etc. The person so deployed shall have to work in extended hours whenever required. The persons so deployed shall be fully trained and experienced in the nature of work for which they are deployed. The deployment shall be as per advise of BHEL engineer. ***In case contractor fails to provide the above mentioned services, BHEL shall have the right to hire these services from other agencies at the risk and cost of the contractor along with overheads. In case these services are not utilized for any reason whatsoever, fully or partly, recovery at the rate of the prevailing minimum wages at TEHRI for the categories given plus 10% will be made from the final bill of the contractor.***

49.3 The BHEL/ and its customer may depute their representative for checking and supervision of important stages of work. The contractor shall be required to provide all facilities for inspection of works, within their quoted rates. Any defect in quality of work or deviations from drawings/ specifications pointed out during such inspection shall be

made good by the contractor in the same way as if pointed out by the BHEL Engineer, without any cost implication to BHEL.

- 49.4 The scope of work also covers all performance tests necessary to ensure that workmanship confirms to relevant standards and that such tests are adequate to demonstrate that the installations complies with the requirements of this specification. All arrangement for conducting tests are to be made by contractor within their quoted rates and tests may have to be repeated to satisfy BHEL/ its customer.
- 49.5 Contractor to ensure services of minimum one qualified Graduate/ Diploma Engineer with specialization in electronics/ Instrumentation having experience in working on DCS, C&I commissioning activities from mobilisation till contract completion. This shall be indicated separately in manpower deployment plan to be submitted by contractor. These Engineers shall be supported by other workmen like electrician, Technicians, helpers etc.

50.0 ERECTION

- 50.1 All works such as cleaning, checking, levelling, aligning, assembling, temporary erection for alignment, dismantling of certain equipment for checking, cleaning, surface preparation, fabrication at site, cutting, grinding, straightening, blue matching, chamfering, filing, chipping, drilling, machining, surface grinding, shaping, fitting up etc. as may be applicable in such erection works are to be treated as incidental to erection and necessary to complete the work satisfactorily and shall be carried out by the contractor as part of the work.
- 50.2 Any fixtures, scaffolding materials, concrete block supports, steel structures required for temporary supporting, for pre-assembly or checking, welding, lifting and handling during pre-assembly and erection shall be arranged by contractor at his cost.
- 50.3 The following provisions cover the technical requirements for equipment installation. The erection, testing and commissioning requirement and procedures not specified in this documents shall be in accordance with the recommendations of the equipment manufacturer or as directed by BHEL Engineer.

THE SCOPE OF WORK SHALL BE BUT NOT LIMITED TO FOLLOWING:

Material handling;

- (a) Receipt of materials, Transportation of materials from stores to site.
(NOT APPLICABLE)

- (b) Unloading and loading of materials.
- (c) Storage of materials.
- (d) Periodic checking of SEE Panels.
- (e) Checking and verification of panels and materials and assisting BHEL/ Customer in this regard.
- (f) Collection of all dismantled equipment/ panels, packing and scrap material, transportation and handing over to customer at the designated locations within plant premises as provided by customer.

Erection and Commissioning:

- (a) Carrying out dismantling of present panels (14 nos per unit)
- (b) Complete erection of all panels supplied by BHEL (10 nos per unit)
- (c) Termination of existing cables and duct to the new panels and laying and termination of additional cables
- (d) Testing and commissioning of excitation system under the scope within time specified. The contractor shall carryout insulation testing, simulation testing etc. as per the instructions of Engineer at site.
- (e) Touchup Painting of panels

Schedule of tests at site during erection and commissioning:

- (a) Visual inspection for mechanical assembly on AVR, converter and field breaker and wiring check.
- (b) Checking of control and regulation signal flow including electronic modules by simulation.
- (c) Power supply check.
- (d) Light load test (Dummy load test) on each thyrister bridge.
- (e) Control sequence inter lock and protection tests on integrated with all cubicles interconnected.
- (f) Voltage build up tests in Auto & manual mode of control.
- (g) Step response test for checking the response on auto control.
- (h) Step response test for limiters.
- (i) Tests on limiters.

Schedule of panels for excitation system per unit:

- | | | |
|--------------------------------|---|--------|
| (a) Regulation panel with AVR | - | 1No. |
| (b) Thyrister converter panels | - | 3 Nos. |

(c) Field breaker panel.	-	1No
(d) Field flashing panel	-	1No
(e) Trunking cubicle	-	2 Nos
(f) Thyrister bridge	-	1 No
(g) Breaker panel	-	1 No

- PANELS

Erection at site/ control room including chipping of floor, fabrication and fixing of base channel frame. Fabrication & providing Steel stools if required, leveling & alignment with spirit level, welding the base channel to the embedded plates/ channels, grouting, fixing of anti-vibration pads, termination of inter panel connections, mounting/ connections of loose instruments, inter panel bus bar connections, commissioning including loop checking, system checking, and putting necessary controls on automatics. Terminations of cables will be by conventional screwed connections, wire wrapping and maxi-termi point crimping connections. Checking of internal wiring, rectification, testing and calibration of equipment mounted inside is in the scope of contractor. The contractor may have to change/ replace items found faulty without any extra cost, however materials for this shall be provided by BHEL. Mostly panels will be delivered fully wired. However wherever required termination of loose wires is to be done. The cleaning of panels has to be done with electrical vacuum cleaner, besides conventional cleaning with brush etc. The drilling of holes in the gland plates for cable entry shall form part of panel erection. All blank holes/ gaps in the gland plates/ boxes etc. shall be properly sealed. The base frames shall be painted suitably. The contractor shall carry out the plugging and sealing of left out holes in the gland plates and other openings at the bottom of panels at his own cost by using fire retardant mortar or good quality sealing material/ Metallic adhesive sealant tap as advised by BHEL.

Any minor alterations required in the bus bar arrangement/ wiring in the panels/ cubicles shall also form part of the work. During testing, commissioning, some equipment/ modules may need replacement/ repairs. All such replacements/ repairs and assistance during commissioning and running of the unit till handing over to the Customer are part of the scope as some of the test/ commissioning will have to be done after the machine is running on various loads.

- 50.4 Most of the equipment are sophisticated having most modern technologies and contractor has to depute Qualified & experienced persons to handle these equipment.

50.5 Any cutting of masonry work, which is necessary shall be done by the contractor at his own cost and shall be made good to match the original work. The Contractor shall obtain prior approval before cutting any masonry/ concrete work.

Exclusions

- Civil works
- Dust & moisture free environment inside powerhouse site of work.
- Earthing terminals for connecting SEE panels during erection.
- Proper illumination in the tunnel.

51.0 TESTING PRE-COMMISSIONING, COMMISSIONING and POST COMMISSIONING.

51.1 Site testing shall be required for all equipment installed by the contractor to ensure proper installation, setting, connection and functioning in accordance with drawings, specifications and manufacturer's recommendations. Refer CI 50.3.

51.2 Testing and pre-commissioning checks shall be as per relevant codes/ practices and BHEL drawings/ specifications and same shall include, but not be limited to the following:

51.3 Not applicable

51.4 In case any defect is noticed during tests, trial runs and commissioning such as loose components, undue noise or vibration, strain on connected equipment etc. the contractor shall immediately attend to these defects and take necessary corrective measures. If any readjustment and realignment are necessary, the same shall be done as per Engineer's instructions including repair, rectification and replacement work by the contractor at his cost. The parts to be replaced shall be provided by BHEL. However, copper/ Teflon washers required for above shall be provided by the contractor at no extra cost to BHEL.

51.5 During this period, though the BHEL's/ Client's staff will also be associated in the work, the contractor's responsibility will be to arrange for the complete requirement of supervision, labour, consumable, T&P and IMTEs required till such time the commissioned units are taken over by the BHEL's customer.

51.6 Not applicable

51.7 During erection of various equipment, prior to commissioning and after commissioning, protocols have to be made with BHEL's customer. The Performa and formats will be given by BHEL and have to be printed by the contractor in adequate numbers. The pre-commissioning activities

will start with various trials, commissioning operations shall continue till units are handed over to customer. Simultaneous commissioning activities will be progress in various areas, checking of equipment erected, making ready for trial runs, alkali flushing, chemical cleaning, mass flushing etc., all these works need specialised gangs including electricians/ instrument technicians in each area to render assistance to BHEL commissioning staff. Contractor shall earmark separate manpower for various commissioning activities. The manpower shall not be disturbed or diverted.

- 51.8 It shall be the responsibility of the contractor to provide workmen of various categories in sufficient numbers along with Engineers/ Supervisors including necessary consumables, T&P etc. during pre-commissioning, commissioning and post commissioning period to assist in commissioning of equipment and attending any problem in equipment erected by the contractor till handing over. The rates quoted shall include all these contingencies also.
- 51.9 It shall be specifically noted that the above employees of the contractor may have to work round the clock alongwith BHEL Engineer and hence overtime payment by the contractor to his employees may be involved. The contractor's accepted rates shall be inclusive of all these factors also.
- 51.10 In case, any rework is required because of contractor's faulty erection, which is noticed during commissioning, the same has to be rectified by the contractor at his cost. If any equipment/part is required to be inspected during commissioning, the contractor will dismantle/ open up the equipment/ part and reassemble/ redo the work without any extra claim.

52.0 FINISH PAINTING

- 52.1 All equipment within the scope of these specifications shall be received duly painted. However during storage and handling the same may get peeled off/ damaged/ deteriorate. All such surfaces are to be thoroughly cleaned and to be touch up painted with suitable approved primer/ finish paint matching with shop paint/ approved final colour. Touch up paints will be supplied by contractor.
- 52.2 Certain equipment shall require spray painting (touch up). The contractor shall make arrangements of the required equipment for spray painting of such equipment at his own cost. Spray painting at the job site shall be permitted only at times and locations approved by the owner/ Engineer.

53.0 FACILITIES TO BE PROVIDED BY BHEL/ CONTRACTOR

- 53.1 It is the responsibility of the contractor to construct sheds, provide all utilities like electricity, drinking water etc., as a part of his scope of work and within the accepted rates. Water for construction purposes can be drawn free of charges from the pipeline network of plant/ point identified by the customer.
- 53.2 Contractor shall make his own arrangement for residential stay of his labour and staff. It is the responsibility of the contractor to construct sheds, provide accommodation with all utilities like electricity, drinking water etc., as a part of his scope of work and within the accepted rates.
- 53.3 **Electricity for erection will be provided free of charge at one point. Further distribution of power shall be carried out by contractor at his cost. All wiring must comply with local regulations and will be subject to Engineer's inspection and approval before connecting supply has to be arranged/installed by contractor at his cost.**
- 53.4 Provision of distribution lines of both electrical power and water from the given points to the required place with proper distribution boards observing the safety rules laid down by the electrical authorities of the state shall be done by the contractor, supplying all the materials like cables, distribution board, switch boards, TPN, CBS, ELCBS/ MCCBS/ earthing strip, change over switches pipes etc. at his own cost. If any failure is caused in supply of the power and water, it is the responsibility of the contractor to make alternate arrangements at his cost. The contractor shall adjust his working shifts/ hours accordingly and deploy additional manpower if necessary so as to achieve the targets.
- 53.5 Following points should be strictly adhered to by the contractor while drawing construction power supply from Distribution Board.
- a) All electrical installations should be as per Indian Electricity rules.
 - b) All distribution Boards installed by the contractor should be constructed with fire proof materials viz. steel frames, Bakelite sheets etc.
 - c) Connection for single phase should be taken from phase and neutral. No where the connection should be taken with earth as neutral.
 - d) All electrical connections should be made through connectors, nuts and bolts, switches, plug and sockets. Loose connections or hooking up of wires shall not be permitted.
 - e) Contractor have to make their own earthing arrangement for their equipment/ DB earthing.

- f) All electrical equipment/ tools and plants should be properly earthed. DBs to be earthed diagonally opposite at two points.
- g) Contractor should use “MCCB” and “ELCB” either on incoming or outgoing connections to the DBs.
- h) Contractor should ensure that all the CBs/ TPNs/ Fuses/ MCCB/ ELCB cables etc. should be of adequate rating/ capacity.
- i) For permission of supply connections contractor has to submit a test report of their installations with a single line diagram of connected/ proposed loads
- j) ELCB will be tested once in a week or as directed by BHEL Engineer by actually simulating the earth leakage for all installations and the same shall be recorded in the logbook to be maintained by the contractor.
- k) In case of power cuts/ load shedding no compensation for idle labour or extension of time for completion of work will be given to contractor.
- l) Adequate lighting facilities such as flood lights, hand lamps and area lighting shall be arranged by the contractor at the site of construction, contractor’s material storage area etc. within finally accepted rates.

53.6 HV AC supply to SEE transformers during SCC and OCC will be arranged by THDC.

53.7 Instruments like digital multimeter/ oscilloscope etc received by THDC along with main equipment supply will be allowed for testing purpose.

53.8 On completion of work or as and when required by BHEL, all the temporary buildings, structures, pipe lines, cables etc. shall be dismantled and levelled and debris shall be removed as per instruction of BHEL by the contractor at his cost. In the event of his failure to do so, same will be got done by the Engineer and expenses incurred shall be recovered from the contractor along with prevailing overhead. The decision of BHEL Engineer in this regard shall be final.

53.9 Erection waste viz packing material, steel pieces, cable scrap and pieces etc., resulted from days waste shall be removed every day by the contractor including cleaning his working area and handed over as per direction of customer/ BHEL.

53.10 1 no. Laptop with internet facility for exclusive use of BHEL site in-charge during period of contract, including extension period will be provided by contractor.

54.0 TIME SCHEDULE

- 54.1 The contractor is required to commence the work within 5 days from the date of issue of the letter of the intent unless BHEL decides to fix any other later date. However, the actual date of start of work, to fix up the zero date of the contract, will be certified by BHEL Engineer after adequate mobilisation of manpower and T&P by the contractor.
- 54.2 Entire work as detailed in the tender specifications shall be completed within 2 months for each unit from the Zero date as per the programme/ milestones indicated by BHEL Engineer. In case 2 units are provided simultaneously with a time gap of 1 month, schedule shall be 3 months for 2 units. Contractor has to mobilise adequate resources to meet BHEL commitments to the customer as indicated from time to time.
- 54.3 Depending upon front and material availability above milestones may be required to pre-pone by 2 weeks. Contractor is required to mobilise additional resources to meet above requirement within their quoted lumpsum price
- 54.4 The contractor has to ensure that work is completed in all respects leaving no pending points. However the punch list/ pending points, which are possible to be attended at site, shall be fully liquidated within two months from the successful trial operation of the unit.
- 54.5 In case if there is suspension in work beyond two months due to reasons not attributable to contractor, then the contractor may be permitted by BHEL to demobilize their manpower and establishment subject to the condition that the required manpower with T&Ps will be made available for balance works which will be as per scope and condition of contract. In such case, the contractor has to remobilize required manpower, Tools & Plant etc and take up then site works within 10 days of intimation. For this purpose the contractor shall be paid a fixed lump sum of Rs 50,000/- Out of this amount of Rs 50,000/- for this activity, Rs 20,000/- will be paid on demobilization and Rs 30,000/- will be paid on complete remobilization as per requirement. No Overrun charges will be paid for this period.
- 54.6 The work under the scope of this contract will deem to be completed in all respects, only when the contractor has discharged all the responsibilities laid down in the contract. The decision of BHEL on completion date shall be final and binding on the contractor.

55.0 **OVER RUN**

- 55.1 In case due to reasons not attributable to the contractor, the work gets delayed and completion date gets extended, the contractor shall not be entitled for any over run compensation for a period of one month after the contractual completion date. In case the completion time gets extended beyond three months as per clause 54, plus one month grace

period as stated above, the contractor shall be considered for payment of fixed over run charges @ Rs.50,000/- (Rupees Fifty Thousand) per Month on receipt of advance notice intending to claim over run & on fulfillment of following conditions:-

- a. The reasons for delay in completion of work are not attributable to contractor but however subject to the provisions of clause - 31.
- b. The targets fixed during the over run period are achieved by contractor.

55.2 Once the claim of over run charges is admitted no other compensation whatsoever (like for delays in receipt of materials, availability of fronts etc.) will be entertained.

55.3 The contractor shall maintain sufficient workforce and other resources required for completion of the job expeditiously for the entire contractual period including total extended period.

56.0 TERMS OF PAYMENT

56.1 The 'Engineer' will certify regarding the actual work executed in the measurement books and bills, which shall be accepted by the contractor in measurement book.

56.2 Contractor shall submit bills for the work completed under the specification, once in a month detailing work done during the month. The format for billing shall be approved by BHEL before raising invoices.

56.3 Subject to any deduction, which BHEL may be authorised to make under the contract, the contractor on the certificate of the Engineer at site be entitled for payment as explained hereunder:

I 90 % of lumpsum rate/ unit shall be payable on prorata basis as under:

- (i) 50% of unit lumpsum rate shall be payable on completion of dismantling of old panels, Installation of new panels, completion of cable termination installation.
- (ii) 20% of unit lumpsum rate on completion of pre-commissioning and commissioning tests.
- (iii) 20% of unit lumpsum rate on successful commissioning of SEE system, OCC and SCC tests.

NOTE:- Further percentage break up for payments against above, if required, will be mutually discussed and finalised at site.

- II 5% of lumpsum rate/ unit will be payable on handing over of the unit to BHEL's Customer or 3 months after contractor has discharged his responsibilities as stipulated in this contract, whichever is earlier, However unit shall be deemed to have been handed over on completion of trial operation.
- III The balance amount shall be payable on completion of all pending work, rework wherever required, area cleaning, reconciliation of materials, fulfillment of contractual obligations and on submission and passing of Final bill.

NOTE: Above payment at II & III shall be released after working out the contract value based on actual work carried out.

57.0 INSURANCE

- 57.1 All equipment will be insured by M/s BHEL/ Customer up to the time of completion of their erection, testing and commissioning within the comprehensive MCE policy. The MCE policy so taken shall have provisions for deductible franchise of 5% of the claim amount with a minimum value of Rs. 25,000/- during erection and Rs. 1,00,000/- during testing. Subject to provisions of GCC clause No. 29.0 the deductible franchise shall be borne by contractor. **The Contractor shall take an insurance policy for all the workmen employed by him against accidents and injuries, under workman compensation, group insurance and as per the statutory requirements.**

Annexure-I

**LIST OF T&Ps AND IMTEs BEING PROVIDED BY BHEL FREE OF HIRE
CHARGES SUBJECT TO AVAILABILITY ON SHARING BASIS**

SL No.	EQUIPMENT	QTY	Remarks
1.	EOT crane in TG hall	1 No	

.NOTES:

1. In addition to above any special tools and tackles, if supplied by the manufacturer will also be provided to the contractor free of hire charges as and when made available.
2. Other terms and conditions regarding above items shall be as per tender clause 37. (Tools and Plants/ IMTEs)

Annexure-II

INDICATIVE LIST OF T & P TO BE ARRANGED BY THE CONTRACTOR

Welding Transformers/ Welding generators	Adequate Nos.
Gas cutting set	Adequate Nos.
Industrial vacuum cleaner	1 No
Hammer Drill Machine with Archer fasteners for civil works	1 No.
Hand crimping tools	Adequate Nos.
Hand crimping tools	Adequate Nos.
Blower	1 No
Vacuum Cleaner	1 No

NOTES:

1. The above list specifies only major T&P (may not be complete to be deployed by the contractor). All additional/ other tools and plants in good and safe working conditions which are required for satisfactory & timely completion of work shall also be deployed by the contractor within finally accepted rates.
2. Other terms and conditions regarding above items please also refer clause 37 (T&P/ IMTEs).

Annexure-III

INDICATIVE LIST OF IMTES TO BE ARRANGED BY THE CONTRACTOR.

SNO	DESCRIPTION	MIN.QTY Nos
1	Megger 500 V	1
2.	Megger 2.5 KV	1
3.	Three Phase variac	1
4.	Single Phase variac	1
5.	Clip on meter 0-10A	1
6.	Clip on meter 0-100-300A	1
7.	Digital Multimeters	4
8.	Variable Rheostat	4
9.	Oscilloscope	1
10.	Anologue AC/ DC voltmeter	2
11.	Anologue AC/ DC ammeter	2
12.	Phase sequence meter	1
13.	Walky-talky set	2 sets
14.	Cell tester	2
15.	Commissioning tool kit	1

NOTES:

1. The above list specifies only major IMTEs (may not be complete to be deployed by the contractor). All additional/ other IMTEs in good and safe working conditions which are required for satisfactory & timely completion of work shall also be deployed by the contractor within finally accepted rates.
2. Other terms and conditions regarding above items please also refer clause 37(T&P/ IMTEs).

**NON DISCLOSURE AGREEMENT
Memorandum of Understanding**

BHEL PSNR is committed to Information Security Management System as per Information Security Policy.

M/s....., providing.....service to BHEL PSNR, Noida hereby undertake to comply with the following in line with Information Security Policy of BHEL PSNR;

- To maintain confidentiality of documents & information which shall be used during the execution of the Contract.
- The documents & information shall not be revealed to or shared with third party which shall not be in the business interest of BHEL PSNR.

()
M/s. BHEL, PSNR

()
M/s.....

**FORMAT OF UNDERTAKING
(To be submitted in the bidder's letter head)**

REF:

Dt.

**Bharat Heavy Electricals Limited
Power Sector – Northern Region,
Plot No. 25 , Sector - 16A,
Distt. Gautam Budh Nagar,
NOIDA – 201 301. INDIA.**

Sub.: Erection, testing, commissioning and trial operation of and handing over of Static Excitation equipment for 4 x 250 MW sets, Tehri HEP Uttaranchal.

Dear Sirs,

With reference to above, this is to confirm that as per tender conditions, we have visited Tehri before submission of our offer and noted the job content & site conditions etc.

We also confirm that we have not changed/ modified the tender documents as appeared in the website and in case of observance at any stage, it shall be treated as null and void. We hereby confirm that we have not taken any deviation from tender clauses together with other references as enumerated in the above referred NIT and convey our unqualified acceptance to all terms and conditions as stipulated in the tender and NIT. In the event of observance of any deviation in any part of our offer at a later date whether implicit or explicit, the deviations shall stand null & void.

We confirm to have submitted offer strictly in accordance with tender instructions.

Thanking you,

Yours faithfully,

(Signature, date & seal of authorized
representative of the bidder)