



**BHARAT HEAVY ELECTRICALS LIMITED, BHOPAL
EXTERNAL SERVICES HYDRO**

NOTICE INVITING TENDER
NIT No.: ESH/MUKERIAN #2/T-01

External Services Hydro Group, BHEL, Bhopal invites sealed bid in two part (Part-I: Techno-commercial Bid; Part-II: Price Bid) for following work from experienced and financially sound bidder who fulfill the qualifying criteria contained in the tender document:

Name of work	Renewal & Replacement of Wound Stator , Replacement of Existing Rotor Poles with New Poles having F-class insulation and Capital Maintenance of Machine No. 2 (15 MW) at Power House No. 1 of Mukerian Hydel Project Stage-I , Punjab
Earnest Money	Rs. 129587- EFT Visit www.bhelbpl.co.in
Tender cost	Rs. 2000 plus 18% GST(9% CGST+ 9% SGST) in the form of EFT (electronic fund transfer) receipt to be enclosed with techno-commercial bid. www.bhelbpl.co.in
Date of uploading tender to web site	30/11/2019 onwards
Last Date & time for selling of tender	Tender document to be downloaded from BHEL web site (www.bhel.com) up to 23-12-2019, 11:00 hrs
Due date & time of bid submission	On or before 23-12-2019, 11.00 Hrs
Due date & time of bid opening	23-12-2019, 14.00 Hrs
Venue for submission & opening of tender	Tender Room(Green Box), Ground Floor, Administrative Building BHEL, Piplani, Bhopal – 462022

NOTE:

1. For detail, refer tender documents.
2. BHEL reserves the right to accept or reject any of the bid / all the bids or cancel or withdraw the invitation of tender without assigning any reason whatsoever and in such case no bidder / intending bidder shall have any claim arising out of such action by BHEL.
3. For LD Clause refer tender documents.

**AGM (External Services Hydro)
New Hydro Block Annexe
First Floor, BHEL Piplani,
Bhopal-462022
Ph:0755-2502143,
Email: dprabhakar@bhel.in**

TENDER

NIT No.: ESH/MUKERIAN #2/T-01

FOR

Renewal & Replacement of Wound Stator , Replacement of Existing Rotor Poles with New Poles having F-class insulation and Capital Maintenance of Machine No. 2 (15 MW) at Power House No. 1 of Mukerian Hydrel Project Stage-I , Punjab



EXTERNAL SERVICES HYDRO

BHARAT HEAVY ELECTRICALS LIMITED

(A Government of India Undertaking)
BHOPAL - 462 022 (M.P)

NIT No.: ESH/MUKERIAN #2/T-01

Sub: Renewal & Replacement of Wound Stator , Replacement of Existing Rotor Poles with New Poles having F-class insulation and Capital Maintenance of Machine No. 2 (15 MW) at Power House No. 1 of Mukerian Hydel Project Stage-I , Punjab

Index

S. No	Description	Page No
1	NIT Notice	01
Part-1 (Technical Bid)		04-87
2	Section 1.0 : Instruction to tenderers	04-09
3	Section 2.0 : General terms and Conditions	10-29
4	Section 3.0 : Special Conditions	30-39
5	Section 4.0 : Technical Specifications	40-55
6	ANNEXURES	56-86
A	Covering letter of the contractor	57
B	Check list and schedule of general particulars	58
C	Financial viability	59
D	Information of similar jobs executed / in progress in past (10 th as on march 2018)	60
E	Month wise manpower deployment plan	61
F	List of tools and tackles	62
G	Declaration sheet	63
H	Certificate of no-deviation (Technical)	64
I	Certificate of no-deviation (commercial)	65
J	Certificate on knowledge about site condition	66
K	Confirmation of reverse auction participation	67
L	Certificate of confirmation of not being black listed	68
M	Contract Agreement	69-71
N	Model form of bank Guarantee (for security deposit)	72-73
O	Procedure-2.3 for conduct of conciliation proceedings	74-79
P	List of consortium banks	80
Q	Indemnity Bond	81
R	Format for (EFT) electronic fund transfer details	82
S	Tentative list of Tools and Tackles required for execution of R & M Work (for reference only).	83-85
T	Taxes	86
Part-2 (Price Bid)		87-96

NIT No.: ESH/MUKERIAN #2/T-01

Renewal & Replacement of Wound Stator , Replacement of Existing Rotor Poles with New Poles having F-class insulation and Capital Maintenance of Machine No. 2 (15 MW) at Power House No. 1 of Mukerian Hydel Project Stage-I , Punjab

PART-1: TECHNICAL BID

SECTION 1.0

INSTRUCTION TO TENDERER

- 1.1** The bid is invited in two parts viz. Part-I: Techno-commercial Bid and part-II: Price Bid. Part-I (Techno-commercial) Bid: should contain documents in the same order as listed below
- 1.1.1** Covering letter as per Annexure-A
- 1.1.2** Check List as per Annexure-B
- 1.1.3** EFT receipt of tender fee as per Annexure-R
- 1.1.4** EFT receipt of EMD as per Annexure-R
- 1.1.5** No deviation certificate-TECHNICAL as per annexure-H
- 1.1.6** No deviation certificate-commercial as per annexure-I
- 1.1.7** Confirmation of participation in Reverse Auction Process as per “Annexure- K
- 1.1.8** Certificate of confirmation for not being black listed Annexure-L
- 1.1.9** Copy of work orders and completion certificates in support of past relevant work experience and other relevant documents as per requirement of clause 3.8.1 to 3.8.3 of Special Conditions of this tender document
- 1.1.10** Copy of duly audited balance sheet and Profit & Loss A/c of past three years ending **31st March 2019.**
- 1.1.11** Banker’s certificate to prove bidder’s financial strength to undertake the work duly indicating the financial limits the bidder enjoys.
- 1.1.12** An attested copy of the Power of Attorney, in case an individual other than the sole Proprietor signs the tender
- 1.1.13** Type of Firm with supporting documents
- 1.1.13.1** **IN CASE OF AN INDIVIDUAL:** His full name, experience, address and nature of business
- 1.1.13.2** **IN CASE OF PARTNERSHIP FIRMS:** The names of all the partners with addresses and their experience. A copy of the partnership deed/ Instrument of Partnership duly certified by a Notary Public shall be enclosed.
- 1.1.13.3** **IN CASE OF COMPANIES:** Date and place of registration including date of commencement certificate in case of public companies and the nature of business carried on by the Company. Certified copies of memorandum and Articles of Association are also to be furnished. Also indicate names, addresses and experience of the Directors.
- 1.1.14** Human Resource totally available with the bidder with organization structure
- 1.1.15** Tools & Tackles totally available with the bidder.
- 1.1.16** Photocopy of PAN card in which PAN is readable.
- 1.1.17** Copy of GSTN if applicable
- 1. 1.18** **Note:**
- (i) **Any deviation written elsewhere in the offer other than that in the document specified at clause 1.1.5 & 1.1.6 shall be treated as unread and shall not be considered for any purpose.**
 - (ii) **The bidder should not give their price offer in Techno-commercial**

Bid. The techno-commercial bid containing price offer shall be accepted only if fulfilling all tender conditions without required of any further clarification.

- 1.2 Part-II (Price) Bid:** Price bid should contain only Price Offer to be submitted strictly as per enclosed Price Schedule. The Price Bid not submitted as per Price Schedule may not be considered.
- 1.3** Part-I (Techno-commercial) Bid and Part-II(Price) Bid should be put in separately sealed envelopes and each envelopes must be marked clearly as Techno-commercial Bid or Price Bid as the case may be. NIT Number and bidder's name & address should also be clearly mentioned on these envelopes. These two envelopes must be put in a bigger envelope and sealed properly. Top of the outer cover/envelop should contain following information:
1. NIT No. & Title of Work
 2. Bid Opening date & time
 3. Address/Venue of Bid Submission
 4. Bidder's Name & Address

The address / venue for bid submission is as follows –

**Tender Room (Green Box),
Gr. Floor, Administrative Building
BHEL, Piplani, Bhopal-462022**

- 1.4** The bidder has to ensure that the tender is submitted on or before the time & date specified in NIT & should be dropped in the tender box (Green Colour) available in tender room at Ground Floor, Administrative Building.
- 1.5** Tenders received after 11.00 am will be treated as late tender and the same shall not be considered under any circumstance.
- 1.6** Opening of tender will start at 2.00 PM and only techno-commercial bid (Part-I) shall be opened on the date of opening.
- 1.7** Price bids (Part-II) will be opened for only those bidders who are found to be qualified after scrutiny and evaluation of techno-commercial offer and approval from PSPCL.
- 1.8** The representative of the bidder should have authority letter from their principal / company for witnessing the tender opening.
- 1.9** Any pre-tender clarifications should reach us at **least 3 days before** the due date of opening for techno-commercial bid, after which it will be assumed that the bidder have accepted the subject tender in totality. No deviation w.r.t. terms & conditions of the tender shall be acceptable.
- 1.10** The tenderer shall closely pursue all the clauses, specifications and drawings if any, indicated in the Tender Documents before quoting. The offers should be strictly in accordance with the tender specifications & General Instructions to the tenderer.
- 1.11** If there are varying or conflicting provisions made in any of the documents forming part of the tender, the accepting authority shall be deciding authority with regard to the intension of the document
- 1.12** Before submission of the bid, the bidder is advised to inspect the site of work and the environments and be acquainted with the actual working and other prevalent conditions, facilities available etc. and furnish the certificate as per enclosed

Annexure “J”. No claim will be entertained later on grounds of lack of knowledge.

- 1.13** Tenderer must fill up all the schedules and furnish all the required information as per the instructions given in various sections of the tender specification. Each and every page of the Bid document must be signed, stamped and serially numbered with index and all tables/Declaration forms/information sheets (Annexure A to Annexure R) should be duly filled in legible writing and Submitted Along With The Techno-Commercial Offer by the tenderer in token of complete acceptance thereof. The information furnished shall be complete in itself. Failing to do the same will leads to the cancellation of the project automatically
- 1.14** The tenderer shall quote the rates in figures (international numerals to be used) as well as in words (English language to be used). If on check there are found to be differences between the rates given by the contractor in words and figures or in the amount worked out by him in the schedule of quantities and general summary, the same shall be adjusted in accordance with the following rules:
- (a) In the event of a discrepancy between rates quoted in words and figures by tenderer, the rate quoted in words shall be taken as correct.
 - (b) In the event of an error occurring in the amount column of Schedule of Quantities because of wrong extension of the unit rate and quantity, the unit rate shall be regarded as firm and extension shall be amended on the basis of the rate.
 - (c) All errors in totaling in the amount column and in carrying forward totals shall be corrected.
- 1.15** In case of repetition of some items in different sections, the lowest rate quoted by the Contractor for such item of work in any section / sub-head of schedule of quantities shall be considered as the quoted rate for the item in all the different section/sub-head for payment.
- 1.16** All entries in the tender shall either be typed or be written in ink. Erasures/cutting/overwriting/use of whitener/ columns left unfilled in tenders, if any, shall be initialed along with date and time and numbered by the officials opening the tenders. The total number of such noticed alterations (or the absence of any alteration) should be explicitly on the first page of the bid and announced in public bid opening. In absence of any alteration / overwriting / blanks, the remark “no correction noted” should be written. Bid should be free from correction, overwriting, using corrective fluid, etc any interlineation, cutting, erasure or overwriting shall be valid only if they are attested under full signature(s) of person(s) signing the bid else bid shall be liable for rejection.
- 1.17** Only tenderer who have previous experience in the work of the nature & description detailed in this tender specification are expected to quote for this
- 1.18** Offer from tenderer who does not have a proven and established experience in the field is not likely to be considered.
- 1.19.0** The tenderer shall give full information w.r.t. following in accordance with Check List at Annexure ‘B’.
- 1.19.1** Permanent Account Number as allotted by the Income Tax Department
- 1.19.2** Goods & Service Tax Registration Number if applicable
- 1.19.3** Financial viability as per Performa enclosed as per Annexure –C.
- 1.19.4** A statement giving particulars of the various services rendered / in progress for similar works by the tenderers indicating the particulars & value of each work, site

location, duration, date of completion as per Annexure –D.

- 1.19.5** The human resource/manpower that are totally available with him, & that will be employed by the tenderer for this work in the form of month-wise & category-wise deployment plan duly indicating the no. of Engineers, Supervisors, skilled & unskilled workers etc. as per Performa at Annexure –E.
- 1.19.6** A list of Tools & Tackles (reference list at annexure-S) that the tenderer is having & those which will be deployed on this job as per Performa as per Annexure-F.
- 1.19.7** An attested copy of the Power of Attorney, in case an individual other than the sole Proprietor signs the tender.
- 1.19.8** Declaration sheet as per preform at Annexure – G.
Certificate of No-Deviation (Technical) at Annexure-H.
Certificate of No-Deviation (Commercial) at Annexure-I
Certificate conforming knowledge about site condition at Annexure-J.
- 1.20** **Note: All the data required to be enclosed with the tender as per the requirements of this section need to be furnished neatly typed, signed and stamped in the given formats only & wherever necessary documentary proof also needs to be enclosed. In the absence of the above information the tender may be considered as incomplete and may lead to rejection.**
- 1.21** The offer shall be kept open for acceptance for a period of **06 months** from the date of opening of techno-commercial offer. In case Bharat Heavy Electricals Limited calls for negotiations, such negotiations shall not amount to cancellation or withdrawal of the original offer, which shall be binding, on the tenderer. All expenses for attending such negotiations are to be borne by the tenderer.
- 1.22** The acceptance of Tender will rest with BHEL which does not bind itself to accept the lowest tender or any tender and reserves to itself full rights to reject any or all the tenders.
- 1.23** The tenderers are required to quote for the complete scope of work with the lowest possible rate. The tenderers quoting for part of the work or incomplete in any respect are likely to be rejected. **The work tendered out is indivisible in nature and the same shall be awarded to a single party.**
- 1.24** Conditional and unsigned tenders, tenders containing absurd or unworkable rates and amounts, tenders which are incomplete or otherwise considered defective and tenders not in accordance with the tender conditions, specifications, etc., are liable to be rejected.
- 1.25** If a tenderer expires after the submission of his tender or after the acceptance of his tender, BHEL may at its discretion, cancel such tender. If a partner of a firm expires after the submission of the tender or after the acceptance of the tender, BHEL may cancel such tender at its discretion unless the firm retains its character.
- 1.26** BHEL will not be bound by any Power of Attorney granted by the tenderer or by changes in the composition of the firm made subsequent to the execution of the contract. BHEL may, however, recognize such Power of attorney and changes after obtaining proper legal advice, the cost of which will be chargeable to the contractor concerned.
- 1.27** If the tenderer deliberately gives wrong information in his tender, BHEL reserves the right to reject such tender at any stage or to cancel the contract, if awarded and forfeit the Earnest Money / Security Deposit / any other moneys due.

- 1.28** Canvassing in any form in connection with the tender is strictly prohibited and the tenders submitted by the Contractor who resorts to canvassing are liable to be rejected.
- 1.29** Tenderer black listed by any BHEL unit/ region or by customer shall not be considered for technical evaluation. During Execution of any unit of customer, BHEL or customer, issue show cause notice to tenderer or blacklist it ,then BHEL has right to short close the tender at tenderer risk and cost.
- 1.30** Tenderer shall also provide the list of employees along with their certified past experiences with their degree, diploma and ITI certificates as required by the tender.
- 1.31** Tenderer shall also provide the list of Tools & Tackles that the tenderer is having & those which will be deployed on this job as per Performa as per Annexure-‘F’ along with their name of manufacture. Calibration certificates should also be provided for measuring equipment
- 1.32** Should a tenderer or, in the case of a firm or Company, its Partner(s) / major shareholder(s) / Director(s) have relation(s) employed in BHEL, the authority inviting tender shall be informed of the fact along with the offer. Otherwise, BHEL may at its sole discretion, reject the tender or cancel the contract and forfeit the Earnest Money / Security Deposit.
- 1.33** If any of the above conditions are not fulfilled by the tenderer BHEL has the right to reject or short close the tender at tenderer risk and cost.
- 1.34** BHEL reserves the right to accept or reject any of the bid / all bids with or without deviation or cancel / withdraw the invitation for bid without assigning any reason whatsoever and in such case no bidder shall have any claim arising out of such action by BHEL.
- 1.35** The offers of the tenderers who are on the banned list as also the offer of the bidders, who engage the services of the banned firms, shall be rejected.
- 1.36** The list of banned firms is available on BHEL web site http://www.bhel.com/index.php/latest_tenders
- 1.37** Wherever required additional sheets may be used

NIT No.: ESH/MUKERIAN #2/T-01

Renewal & Replacement of Wound Stator , Replacement of Existing Rotor Poles with New Poles having F-class insulation and Capital Maintenance of Machine No. 2 (15 MW) at Power House No. 1 of Mukerian Hydel Project Stage-I , Punjab

PART-1: TECHNICAL BID Section 2.0 GENERAL TERMS AND CONDITIONS



- 2.1 DEFINITIONS:** The following terms and expressions shall have the meaning hereby assigned to them except where the context otherwise requires.
- 2.1.1** **‘BHEL’** shall mean Bharat Heavy Electricals Limited, a Company registered under the Indian Companies Act, 1956 with its Registered Office at BHEL House, Siri Fort, New Delhi, Pin-110049 through its office at Piplani, Bhopal – 462022 or its authorized Officers or its Engineers or other employees authorized to deal with any matters with which these persons are concerned on its behalf.
- 2.1.2** **‘CLIENT’ or ‘CUSTOMER’** shall mean the project authorities to whom BHEL is supplying the equipment & providing the services.
- 2.1.3** **‘CONTRACTOR’** shall mean the individual, firm or Company who enters into contract with BHEL for providing the services as per this Tender and shall include their executors, administrators, and successors and permitted assigns.
- 2.1.4** **‘CONTRACT’ or ‘CONTRACT DOCUMENT’** shall mean and include the agreement, the work order, the accepted appendices of rates, schedules of quantities, if any, General Terms & Conditions of the Contract, Special Conditions of the contract, Instructions to Tenderers, drawings, technical specifications, the special specifications, if any, & the Letter of Intent / acceptance letter issued by BHEL. Any conditions or terms stipulated by the tenderer in the tender documents or subsequent letters shall not form part of the contract unless specifically accepted in writing by BHEL in the letter of intent and incorporated in the Work Order.
- 2.1.5** **‘TENDER DOCUMENTS’** shall mean the NIT, Instructions to Tenderers, General Conditions of Contract, Special Conditions, Price Schedule, Technical Specifications and Special Specification if any.
- 2.1.6** **‘LETTER OF INTENT’** shall mean the intimation by a letter / telegram / mail/fax to the tenderer that the tender has been accepted in accordance with provision contained in that letter. The responsibility of the contractor commences from the date of issue of this letter and all the terms and conditions of contract are applicable from this date.
- 2.1.7** **‘COMPLETION TIME’** shall mean the period specified in the Letter of Intent or date mutually agreed upon for completing the work / services stipulated in the work order to the satisfaction of the Site-In-Charge being of required standard and conforming to the specifications of the contract.
- 2.1.8** **‘PLANT’** shall mean and connote the entire assembly of the plant and equipment is covered by the Contract.
- 2.1.9** **‘EQUIPMENT’** shall mean all machinery, materials, structure, all electricals and other components of the plant covered by the contract.
- 2.1.10** **‘TESTS’** shall mean and include such test or tests to be carried out by the contractor as are prescribed in the contract or considered necessary by BHEL in order to ascertain the quality, workmanship, performance and efficiency of the contracted work or part thereof.



- 2.1.11** **‘APPROVED, DIRECTED or INSTRUCTED’** shall mean approved, directed or instructed by BHEL Engineer / Site Engineer / Project- in-charge/ Site-in-Charge.
- 2.1.12** **‘WORK’ or ‘CONTRACT WORK’** shall mean and include the work to be done by the Contractor as specified in the Tender documents.
- 2.1.13** **‘LAW GOVERNING THE CONTRACT AND COURT OF JURISDICTION’**
The contract shall be governed by the Law for the time being in force in the Republic of India. Subject to clause 2.27.1 or 2.27.2 of this contract. The Civil Court at Bhopal shall alone have exclusive jurisdiction in regard to all claims in respect of this Contract.
- 2.1.14** **‘UNDER TAKING’:** The tenderer shall give an undertaking under the official secret Act for maintaining secrecy of the tender documents, drawings or other records connected with the work given to him. The unsuccessful tenderer shall return all the drawings / documents given to them.
- 2.2** **ISSUES OF NOTICE :** The Contractor shall furnish to the Site-In-Charge, the name designation and address of his authorized agent/ In-charge of Project and all complaints, notices, communications and references shall be deemed to have been duly given to the Contractor, if delivered to the Contractor or his authorized agent or left at or posted to the address either of the contractor or his authorized agent and shall be deemed to have been so given in the case of posting on the day on which they would have reached such address in the ordinary course of post or at which they were so delivered or left
- 2.3** **STORAGE OF MATERIALS AT SITE (INCLUDING LOADING, UNLOADING, HANDLING AND TRANSPORT):** The contractor shall make all arrangements to Load, unload, handle, transport and store all materials at site in proper manner (as approved by BHEL Site-In-Charge) so as to avoid contamination and deterioration. The contractor shall make own arrangement for T & Ps including cranes. For storage, open space shall be given by BHEL/ Customer and contractor shall make its own covered shed. The places at site where materials are to be stored shall be subject to the approval of the Site-in-charge. The store should have proper illumination, record keeping and locking arrangements for safe custody of the materials. The store should be made before arrival of the materials at site. Space required for stores may be conveyed during the offer stage.
- 2.4** **SUB-LETTING OF CONTRACT :** The contractor may assign or sublet the contract or any substantial part thereof or any part of the plant to a party as per vendor list submitted along with the offer, provided that any such arrangement shall not relieve the Contractor from any obligation, duty or responsibility under the contract. The Contractor shall submit its list of vendors for sourcing supplies/ services along with the tender. BHEL may seek approval of the contractor and its sub-vendors from the customer and shall in turn give approval.
- 2.5** **REJECTION OF BID DUE TO UNSATISFACTORY PERFORMANCE IN THE PAST :** The bid of the contractor may be rejected due to unsatisfactory performance in the past at any of the BHEL units or due to rejection of the contractor by the customer.



2.6 CONTRACT QUALITY ASSURANCE AND QUALITY PLAN : The contractor shall submit a quality assurance program containing the quality management and procedures that are proposed to be followed in the performance of the works during various phases. The quality assurance programs to be followed for the execution of the contract will be mutually discussed and agreed.

Within an agreed scheduled period after the LOI, the contractor shall submit a quality plan, detailing out the specific quality control procedure to be adopted for controlling the quality characteristics relevant to major activities to be undertaken. BHEL/ Customer will approve the plan identifying the “customer hold points” for inspection. During the inspection, in case the materials are rejected, it shall be the

responsibility of the contractor to furnish approved materials. The contractor shall be fully responsible for the proper execution of all quality plans and shall also perform all quality control activities, inspection and tests agreed with BHEL/ Customer to demonstrate full compliance with the specification requirements. BHEL/ Customer shall witness test/inspection, etc as per the “customer hold points” indicated in the quality plans.

2.7.0 EARNEST MONEY:

2.7.1 EMD is to be paid by tenderers for securing fulfilment of any obligation in terms of the NIT. Every tender must be accompanied by the prescribed amount of Earnest Money Deposit in full, in any one of the following form:

- Electronic Fund transfer credited in BHEL account (before tender opening). EFT credit receipt to be enclosed with tender
- Tenders received without Earnest Money EFT receipt in full or not in the manner prescribed above will not be considered.

2.7.2 The Earnest Money Deposit of the successful tenderer will be retained towards part of Security Deposit.

2.7.3 In the case of unsuccessful tenderer, the Earnest Money will be refunded after finalization of the tender.

2.7.4 FORFEITURE OF EMD: EMD by the tenderer will be forfeited as per NIT condition if:

- After opening the and within the offer validity period the tenderer revokes his tender or makes any modification in his tender which is not acceptable to BHEL.
- The contractor fails to deposit the required security deposit or commence the work within the period as per LOI/ contract.
- EMD by the tenderer shall be withheld in case any tenderer is envisaged under the provisions of extant “Guidelines on suspension of Business suppliers/contractors” and forfeited/released based on the action as determined under these guidelines

2.7.5 EMD given by all unsuccessful tenderers shall be refund normally within 15 days of award of work.

2.7.6 EMD shall not carry any interest.



- 2.7.7** EMD of successful tender shall be retained as a part of security deposit.
- 2.8.0 SECURITY DEPOSIT**
- 2.8.1** Security deposit means the security provided by the contractor towards the fulfilment of any obligation in terms of the provision of the contract. Upon acceptance of tender, the successful tenderer must deposit the required amount of security deposit, after adjusting the amount of Earnest Money duly deposited with the Tender, within the time specified in the letter of intent for satisfactory completion of work.
- 2.8.2** The total amount of Security Deposit shall be 5% of the contract value. EMD of the successful renderer shall be converted and adjusted towards the required amount of Security Deposit.
- 2.8.3** The balance amount to make up the required Security Deposit of 5% of the contract value may be accepted in the following forms:
- 2.8.3.1** Electronic Fund Transfer in favour of BHEL
- 2.8.3.2** Bank Guarantee from Scheduled Banks/ Public Financial Institutions as defined in the Companies Act. The Bank Guarantee in the prescribed Performa as per annexure-B of general terms and condition from any one of consortium bank listed in annexure-C of general terms and condition.
- 2.8.3.4** Fixed Deposit Receipt issued by Scheduled Banks/ Public Financial Institutions as defined in the Companies Act (FDR should be in the name of the Contractor, a/c BHEL)
- 2.8.3.5** Securities available from Indian Post offices such as National Savings Certificates, Kisan Vikas Patras etc. (held in the name of Contractor furnishing the security and duly endorsed/ hypothecated/ pledged, as applicable, in favour of BHEL)
- 2.8.4** (Note: BHEL will not be liable or responsible in any manner for the collection of interest or renewal of the documents or in any other matter connected therewith)
- 2.8.5** Security Deposit shall be released to the Contractor upon fulfilment of contractual obligations as per terms of the contract.
- 2.8.6** At least 50% of the required Security Deposit, including the EMD, should be collected before start of the work. Balance of the Security Deposit can be collected by deducting 10% of the gross amount progressively from each of the running bills of the Contractor till the total amount of the required Security Deposit is collected.
- 2.8.7** If the value of work done at any time exceeds the contract value, the amount of Security Deposit shall be correspondingly enhanced and the additional Security Deposit shall be immediately deposited by the Contractor or recovered from payment/s due to the Contractor.
- 2.8.8** The recoveries made from running bills (cash deduction towards balance SD amount) can be released against submission of equivalent Bank Guarantee in acceptable form, but only once, before completion of work.
- 2.8.9** The Security Deposit shall not carry any interest



- 2.8.10** Security Deposit will be held including bank Guarantee till the end of warranty period plus 03 months. Validity of the Bank Guarantee furnished towards Security Deposit under clause 10.1 e) above, should be valid up to the period of completion of warranty period as stipulated in the Letter of Intent/ WO, plus 03 months claim period and the same will be kept valid by proper renewal till the satisfactory completion of the warranty period.
- 2.8.11** It shall be the responsibility of the contractor to ensure Extension of BG as and when required and shall be submitted before 15 days of its expiry date. On failure to do so necessary action as deemed fit shall be initiated.
- 2.8.12** Failure to deposit the Security Deposit within the stipulated time may lead to forfeiture of Earnest Money and cancellation of the award of work. BHEL reserves the right of forfeiture of Security Deposit in addition to other claims and penalties in the event of the Contractor's failure to fulfil any of the contractual obligations or in the event of termination of contract as per terms and conditions of contract. BHEL reserves the right to set off the Security Deposit, against any claims of any other contracts with BHEL.
- 2.8.13** **Refund of security deposit:** Security deposits will be released only after the Warranty period is over. In case contractor wants refund of total security money deposited by him along with final bill, the contractor will have to submit absolute "No Demand Certificate" in the prescribed form and returns properties belonging to BHEL/ customer taken, borrowed or hired by him for carrying out the said works and produce a BG of an amount equivalent to 100% of the total security deposit at the time of final bill on successful completion of trial run with validity up to the expiry of Warrantee period + 3 months claim period.
- 2.9** **COMMENCEMENT & COMPLETION OF WORK :** The contractor shall commence the work within the time indicated in the Letter of Intent and shall proceed with the same with due expedition without delay. No mobilization charges of any kind are payable.
- 2.10** At the time of mobilization of work at site, the contractor is required to submit the copies of following documents to Site-In-Charge for verification:
- a) BG as per contract.
 - b) Contract Agreement
 - c) Indemnity Bond
 - d) EPF registration
 - e) Valid Test Certificates for the Plant & Machinery being deployed at site.
 - f) Valid Insurance Policy covering third party liability, workmen compensation & tool & tackles brought to site.
 - g) Proper Labor License.
 - h) Work force deployment schedule for posting to site.
 - i) Detail work schedule (L-3 network).
- 2.11** If the successful tenderer fails to commence the work within the stipulated time, BHEL at its sole discretion will have the right to cancel the contract.
- 2.12** The Earnest money and / or Security Deposit will stand forfeited without any further reference to the Contractor without prejudice to any of BHEL's other rights and remedies in this regard



- 2.13** All the works shall be carried out under the direction and to the satisfaction of BHEL.
- 2.14** The transported equipment, erected/constructed plant or work performed under the contract, as the case may be, shall be taken over by BHEL/customer when it has been completed in all respects and / or satisfactorily put into operation & site is made clear
- 2.15.0** **WORK EXECUTION & SCHEDULE:**
- 2. 15.1** The Contractor is responsible for the correct execution of the work in accordance with the scopes/drawings provided to him. The levels, measures and other information concerning the existing site as shown on the drawings or as described are supposed to be correct but the contractor shall verify them for himself and no extra claim, whatsoever shall be entertained on account of any discrepancy or omission in such matters or on account of the description turning out to be different from what was expected.
- 2. 15.2** In case the contractor requires any clarifications, conditions, drawings etc., the Site-In-charge shall be contacted.
- 2. 15.3** The contractor will be required to submit detail work schedule before start of work, and he shall submit a Bar chart/PERT Chart/CPM to the Site-in-charge indicating how the contractor proposes to complete the work within the stipulated time as per the contract. This Bar Chart /Pert Chart / CPM should clearly indicate the various activities in the proper sequence of construction. Once this program of construction has been submitted by the contractor and approved by the Site-in-charge, the contractor shall follow the detailed work schedule, organize labor / material to suit the completion period of work & abide by the approved construction program with the progress indicated in the chart. The detailed work schedule shall be organized to suit the completion period of work within the shutdown given by the customer.
- 2. 15.4** The work under the contract will be deemed to be completed in all respect, only when the trial runs, testing and commissioning including trial operation are completed. The contractor shall obtain no dues form concerned BHEL / Customer department.
- 2. 15.5** On final completion of work, the contractor shall submit the completion report and obtain approval from BHEL.
- 2. 15.6** The entire schedule as approved shall be strictly followed by contractor. If delay is for any reason beyond the control of the contractor, then the contractor shall bring it to the notice of engineer in charge.
- 2.16** **INTEREST CHARGES :** No interest shall be payable by BHEL on Earnest Money, Security Deposit / or on any moneys due to the Contractor by BHEL.



- 2.17 DRAWINGS & DOCUMENTS:** Relevant drawings & documents available at project shall be provided to successful bidder during execution of the work. If some relevant drawings/documents of some assemblies are not available (being old project), R&M work to be carried out as per instruction of BHEL site in-charge.
- 2.18.0 METHOD OF WORKMANSHIP**
- 2.18.1** All work shall be performed in a first class, neat and good workmanship manner by technical staff skilled in the trade involved.
- 2.18.2** The installation shall be carried out in such a manner as to preserve access to other equipment installed.
- 2.19.0 INSPECTION & TESTING AT CONTRACTOR's WORKS**
- 2. 19.1** BHEL / customer shall within 10 days from the date of offsite inspection for the work/equipment give a notice in writing to contractor of any objection. The contractor shall give due consideration to such objection and shall either make the modifications that may be necessary to meet the said objections or shall confirm in writing to BHEL / customer giving reasons therein that no modifications are necessary to comply with the contract.
- 2. 19.2** BHEL / customer shall have access to the contractors/sub-contractor's premises or work and shall have the power at all reasonable time, to inspect any portion of the work being carried out or equipment or examine the materials and workmanship of the equipment's being manufactured in other premises of the contractor/sub-contractor.
- 2. 19.3** In all cases where the tests whether at premises or works of the contractor or of any sub –contractor are to be conducted, the contractor/sub-contractor, shall provide free of charges such labour, materials, electricity, fuel, water, stores, apparatus and instruments as may be reasonably demanded by BHEL / customer or his authorized representative to carry out effectively such test of the equipment's in accordance with contract and shall give facilities to BHEL / customer or to his authorized representative to accomplish testing.
- 2.20.0 PROGRESS REPORT & FIELD OFFICE RECORD**
- 2.20.1** The contractor shall prepare and submit weekly progress report / charts, manpower deployment, material receipt report and such other reports as required by the Site-In-Charge for the monitoring and smooth progress of work. Progress report should explicitly indicate progress achieved against the targets, reasons for delay and action plan to compensate for such delay.
- 2.20.2** The contractor shall maintain records pertaining to the quality of work and inspection and testing compliance with all technical requirements. Where safety of work is involved, the contractor shall submit written procedure to the Site-In-Charge
- 2.21.0 MEASUREMENT OF WORK:**



- 2.21.1** Before taking any measurement of any work, the Site-In-Charge or a subordinate deputed by him shall give reasonable notice to the contractor. If the contractor fails to attend at the measurements after such notice or fails to countersign or to record the difference within a week from the date of measurement in the manner required by the Site-In-Charge then in such event the measurements taken by the Site-In-Charge or by the subordinate deputed by him shall be final and binding on the contractor and the contractor shall have no right to dispute the same.
- 2.21.2** For progressive/running bill payments, the contractor shall present detailed measurement sheets in triplicate duly indicating all relevant details based on technical documents and connected drawings for work done during the month / period under different categories in line with terms of payment as per letter of intent. The basis of arriving at the quantities / weight shall be the relevant documents and drawings released by BHEL. These measurement sheets shall be prepared jointly with Site-In-Charge and signed by both the parties.
- 2.21.3** These measurement sheets will be checked by the Site-In-Charge and quantities and percentage eligible for payment under different groups shall be decided by him. The abstract of quantities and percentage so arrived at based on the terms of payment shall be entered in the measurement book and signed by both the parties.
- 2.21.4** Based on the above quantities the contractor shall prepare the bills in the prescribed proforma and work out the financial value. These will be entered in the Measurement Book and signed by both the parties. Payment shall be made by BHEL after effecting the recoveries due from the contractor.
- 2.21.5** All recoveries due from the contractor for the month / period shall be effected in full from corresponding running bills unless specific approval from competent authority is obtained to the contrary.
- 2.21.6** Measurement shall be restricted to that quantity for which it is required to ascertain the financial liability of BHEL under this contract.
- 2.21.7** Measurements shall be taken jointly by persons duly authorized by BHEL and the Contractor.
- 2.21.8** Passing of bills covered by such measurement does not amount to acceptance of the completion of the work measured by BHEL. Any left out work has to be completed by the contractor, as directed.
- 2.21.9** Final measurement and bill shall be prepared in the Performa prescribed for the purpose, based on the certificate issued by the Site-In-Charge that the entire work as stipulated in the tender specification has been completed in all respect to the entire satisfaction of BHEL. The contractor shall give unqualified '**NO CLAIM AND NO DEMAND CERTIFICATES**'. All the tools and tackles loaned to him should be returned in satisfactory condition to BHEL. The abstract of final quantities and financial values shall also be entered in the Measurement Book and signed by both parties. The final bill shall be paid within a reasonable time after the completion of the work.

2.22.0 RIGHTS OF BHEL

- 2.22.1** BHEL reserves to itself the following rights in respect of this Contract without entitling the Contractor to any compensation as below:
- 2.22.2** To get the work done through another agency at the risk and cost of Contractor, in the event of Contractor not starting the work in time, poor progress of work, inability to get the work done, delay in completion of Contract, poor quality of work, persistent disregard of instructions of BHEL, assignment transfer, or subletting of the contracted work without written permission of BHEL, non-fulfilment of any contractual obligations etc. and to claim / recover compensation for such losses from the contractor including BHEL's supervision charges and overheads from Security Deposit / other dues in addition to any other action that may be taken. However, BHEL shall notify such action.
- 2.22.3** To withdraw any portion of work and/or to restrict / alter quantum of work as indicated in the contract during the progress of work and get it done through another agency and /or by the departmental staff to suit BHEL's commitments to its Customer.
- 2.22.4.0** To terminate the contract after due notice and forfeit the Security Deposit and recover the loss sustained in getting the balance work done through other agencies in addition to liquidated damages in the event of:
- 2.22.4.1** Contractor's continued poor progress. Withdrawal from or abandonment of the work before completion of the work.
- 2.22.4.2** Corrupt act of the contractor.
- 2.22.4.3** Insolvency of the contractor. Persistence disregard of the instructions of BHEL.
- 2.22.4.4** Assignment Transfer, Subletting of the contract work without BHEL's written permission.
- 2.22.4.5** Non-fulfilment of any contractual obligations or obligations under the law. To recover any money due from the Contractor from out of any money due to the Contractor under this or any other Contract or from the Security Deposit.
- 2.22.5** To claim penalty or compensation for losses sustained including BHEL's supervision charges and overheads in case of termination of contract or negligence of work by the contractor and/or to levy liquidated damages for delay in completion of work.
- 2.22.6** To determine the Contract or to restrict the quantum of work and pay for the portion of work done in case BHEL's contract with its customer is terminated for any reason.
- 2.22.7** To effect recoveries from any amounts due to the contractor under this or any other contract or in any other from the moneys which BHEL is forced to pay to anybody due to contractor's failure to fulfil any of his obligations.
- 2.22.8** To restrict or increase the nature of work to suit site requirements, since the tender specification is based on preliminary documents and quantities furnished therein are indicative and approximate. The rates quoted shall not be subjected to revision by the contractor in such case.



- 2.22.9** To deploy BHEL's skilled and/or semi-skilled workmen in case of emergency / poor progress / deficiency in skill on the part of the employees of the contractor and to recover the expenditure on account of the same from the money due to the contractor.
- 2.22.10** The Site-In-Charge shall have full powers to acquire the removal from the premises of all materials which in his opinion are not in accordance with the specifications and in case of default the Site-In-Charge shall be at liberty to employ other persons to remove the same without being answerable or accountable for any loss or damage that may happen to arise to such materials. The Site-In-Charge shall have full powers to ask for other proper materials to be substituted thereof and in case of default the Site-In-Charge may ask the same to be supplied and all costs which may arise due to such removal and substitution are to be borne by the contractor.
- 2.22.11** While every endeavor will be made by BHEL to this end, BHEL cannot guarantee uninterrupted work due to conditions beyond its control. The contractor will not be entitled to any compensation / extra payment on this account.
- 2.22.12** In the event of any dispute of technical nature, the decision of BHEL and / or Site-In-Charge shall be final and binding on the Contractor.
- 2.23.0** **RESPONSIBILITIES OF THE CONTRACTOR IN RESPECT OF LOCAL LAWS, EMPLOYMENT OF WORKERS ETC**
- 2.23.1** The contractor should follow the prevailing industrial / labor laws as amended from time to time and shall also take all safety measures required during the execution of this order.
- 2.23.2** The Contractor shall be fully responsible for correctness & quality of his work to the entire satisfaction of BHEL / Customer. The work shall be executed in accordance with the directions, instructions, drawings and specification. The work shall be performed in a first class, neat and good workmanship manner by technical staff skilled in the trade involved. The installation shall be carried out in such a manner as to preserve access to other equipment installed. If during the progress of manufacture or supply of plant, BHEL/customer notifies in writing to the contractor that the contractor has installed/manufactured any plant or part of plant unsound or imperfect, or has supplied any plant inferior in quality to that specified, the contractor on receiving details of such defects or deficiency, shall at his own expenses, within such time as may be reasonably necessary for the purpose, alter, reconstruct or remove such plant or part of plant or supply fresh materials as per standard specification and in case the contractor fails to do so, BHEL may on giving the contractor **thirty days'** notice in writing of his intention to do so, proceed to alter, reconstruct or remove such plants or part of plants at the contractor's cost provided that nothing in this clause shall be deemed to deprive BHEL/ customer or affect any rights which he may otherwise have in respect of such defect or deficiencies and provided that such replacement shall be carried out by BHEL/ customer within a reasonable time and at a reasonable price and as far as possible, to the same specification and under competitive conditions.



- 2.23.3** If the completed plant or any portion taken over is found to be defective or fails to fulfil the requirement of the contract, the Site-In-Charge shall forthwith give the contractor notice setting forth particulars of defects or failure and the contractor shall make the defects good, or alter the same to make it comply with the requirements of contract. If the contractor fails to do so, within a reasonable time, BHEL/Customer may reject and replace at the cost of the contractor, the whole or any portion of the plant, as the case may be, which is defective or fails to fulfil the requirement of the contract. In case of such replacement by BHEL, contractor shall be liable to pay to BHEL the extra cost, if any of such replacement delivered and/or erected as provided for in the original contract. Such extra cost and the damages being the ascertained difference between the prices paid by BHEL/Customer, under the provision above mentioned for such replacement and the contract price for the plant so replaced and also to repay any sum paid by BHEL/Customer to the contractor in respect of such defective plant.
- 2.23.4** If in the opinion of the contractor any work is insufficiently specified or required modifications, the Contractor shall refer the same in writing to the Site-In-Charge and obtain his instruction / approval in writing before proceeding with the work. If contractor fails to refer such instance, any excuse for faulty erection, for poor workmanship or delay in completion shall not be entertained.
- 2.23.5** Land belonging to BHEL or its customer under temporary possession of BHEL shall not be occupied by the contractor without the written permission of BHEL.
- 2.23.6** The old plant and equipment, which are being replaced by new plant and equipment will be the property of the customer. The customer shall provide space or store for storing the dismantled plant and equipment within the plant premises. The contractor shall stack the dismantled material properly.
- 2.23.7** The Contractor will be required to sign a contract with BHEL on Non-judicial stamp paper as per **Annexure – “A”** of General Terms & Conditions. The cost towards agreement shall be borne by the contractor.
- 2.23.8** All the properties/equipment/components of BHEL/its customer loaned with or without deposit, to the contractor shall remain the properties of BHEL/ its customer. The contractor shall use such properties for the purpose of execution of this contract. The contractor shall return them in good conditions as and when required by BHEL/its customer. In case of non-return, loss, damaged, repairs, etc., cost thereof, as may be fixed by the Site-In-Charge, will be recovered from the contractor.
- 2.23.9** **It shall not be obligatory on the part of BHEL/ customer to supply any tools and tackles.** Contractor has to arrange all the testing equipment's, cables, auto transformer, measuring equipment's and any other equipment required to complete all the tests mentioned in NIT and required for successful commissioning of the machine.
- 2.23.10** **ROYALTY** – Royalty for equipment's supplied shall be borne by the contractor and nothing extra on this account shall be paid to him by BHEL.
- 2.23.11**



- 2.23.11 PERMANENT BENCH MARKS** – Where directed by the Site-In-Charge, the contractor shall provide permanent bench marks. Likewise, any other levels or lines or points specifically required by the Site-In-Charge shall be built in. The contractor shall carefully protect and preserve such important mark during execution of the work.
- 2.23.12 SITE TESTING OF MATERIALS** - For the tests carried out by the contractor at site, the contractor shall install testing equipment at site and shall ensure and certify the calibration of the equipment so installed and shall maintain the same in working order throughout the period of construction. The contractor shall also provide the necessary trained staff for carrying out such tests and using such equipment. List of equipment's with range shall be submitted by the bidder.
- 2.23.13 APPROVAL OF LOCAL MATERIALS FOR USE** - Before bringing any material (locally purchased) to site in bulk for civil works, infrastructure, plant services, etc, contractor shall have to bring a sample first and get it approved by Site-In-Charge. Any material brought to site in contravention of this conditions shall be rejected forthwith and no payments shall be made.
- 2.23.14 COMPENSATION-** For all works having contract value of Rs. 5,00,000/- or above, BHEL shall recover the amount of compensation paid to victim(s) by BHEL towards loss of life/ permanent disability due to an accident which is attributable to the negligence of contractor, agency or firm or any of its employees as detailed below.
- a) Victim: Any person who suffers permanent disablement or dies in an accident as defined below.
- b) Accident: Any death or permanent disability resulting solely and directly from any unintended and unforeseen injurious occurrence caused during the manufacturing/ operation and works incidental thereto at BHEL factories/ offices and precincts thereof, project execution, erection and commissioning, services, repairs and maintenance, trouble shooting, serving, overhaul, renovation and retrofitting, trial operation, performance guarantee testing undertaken by the company or during any works/ during working at BHEL Units/ Offices/ townships and premises/ Project Sites.
- c) Compensation in respect of each of the victims:
- i. In the event of death or **permanent disability** resulting from Loss of both limbs: Rs. 10,00,000/- (Rs. Ten Lakh).
- ii. In the event of **other permanent disability**: Rs.7,00,000/- (Rs. Seven Lakh)
- d) Permanent Disablement: A disablement that is classified as a permanent total disablement under the proviso to section 2 (I) of the Employee's Compensation Act, 1923.
- 2.23.15** The contractor shall not claim any compensation due to reduction in the scope of work due to changes in design, which curtail the quantum of work.



- 2.23.16** The contractor shall fully indemnify BHEL/its customer against all claims of whatever nature arising during the course of execution of this contract due to the acts of contractor/his personnel.
- 2.23.17** In the event of any claim or demand being made or action being brought against BHEL/Customer for infringement or alleged infringement of letter, patent in respect of any machine plant, work or thing used or supplied by the contractor under this contract or in respect of any method of using or working by BHEL/Customer of such machines, plant, work or thing, the contractor will indemnify BHEL/Customer against such claim or demand and all costs and expenses arising from or incurred by reason of such claim or demand. In case the equipment in such suit or proceedings is held to constitute infringement and the use of the equipment or part is prohibited, the contractor shall at his own expenses either procure for BHEL/Customer the right to continue using the equipment, modified it so as it becomes non-infringing or remove the equipment and refund BHEL/Customer price plus the transportation and installation cost thereof.
- 2.23.18** The contractor shall ensure that no damage is caused to any person / any existence work/property of customer/other parties working at site. If any such damage is caused, it shall be the responsibility of the contractor to make good the losses and compensate the affected parties at his own cost. The contractor shall indemnify BHEL for any such eventuality in the prescribed proforma as per Annexure "Q" of General Terms & conditions.
- 2.23.19** Any delay in completion of work or non-achievement of periodical targets due to reasons attributable to the contractor, will have to be compensated by the contractor either by increased manpower and resources or by working extra hours or more than one shift at no extra cost to BHEL.
- 2.23.20** The contractor shall execute the work under the conditions usual to such power plant construction and in conjunction with numerous other operations at site. The contractor and his personnel shall co-operate and co-ordinate with other agencies at project site and proceed in a manner that shall help in the progress of work at site as a whole.
- 2.23.21** The contractor shall keep the area of work clean and shall remove the debris etc. while executing day-to day work. Upon completion of work, the contractor shall remove from the vicinity of work, all scrap, packing materials, rubbish, unused and other materials and deposit them in places specified by the Site-In-Charge. The Contractor shall also demolish all the hutment's sheds, offices, etc. constructed and used by him and shall clean the debris. In the event of his failure to do so, the same will be arranged to be done by the Site-In-Charge and the expenses for the same shall be recovered from the contractor.
- 2.23.22** The contractor shall execute the work in the most professional manner in the stipulated time. Accuracy of work and timely execution shall be the essence of this contract. The contractor shall be responsible to ensure that the quality, assembly and workmanship conform to the dimensions and clearance given in the drawings and/or as per the instructions of the Site-In-Charge.



- 2.23.23 Establishment of Site Office** – Contractor shall make its own office at site. He will be required to maintain good office at site with necessary staff & infrastructure like mobile phone, Computer System with Printer, UPS and internet. Contractor shall extend all office facility and infrastructure for BHEL / Customer official use.
- 2.23.24** The contractor under this contract shall also provide free of cost service of highly killed/ skilled persons during the period of contract exclusively for use by BHEL. This manpower will be required for following services;
- One number highly skilled worker (Qualified computer operations) for office and stores work and for maintaining the documentation and records / photographs and photocopying/ scanning the document at site from site opening to handing over of machine
 - One number office boy for cleaning and maintaining site office and for serving tea and snacks and document/ dak distribution.
- 2.23.25** In case there is no specification laid down in the contract for a class of work, such work shall be carried out in accordance with the standard practice and instructions, and of the Site-In-Charge.
- 2.23.26** No levy, payment or charge made or imposed shall be impeached by reason of any clerical error or by reason of any mistake in the amount levied, demanded if charged.
- 2.23.27** The contractor shall take all reasonable care to protect the materials and the work till such time the plant/equipment has been taken over by BHEL/its customer. It will be the responsibility of the contractor to ensure safe lifting of the equipment to avoid damages/accidents.
- 2.23.28** Contractor shall not stop work or abandon the site for whatsoever reason or dispute, excepting for force majeure conditions. All problems/dispute shall be separately discussed and settled without affecting the progress of work, stoppage or abandonment of work, other than under force majeure conditions, shall be treated as breach of contract and dealt with accordingly.
- 2.23.29.0 OBSERVING LOCAL LAWS, PROVIDING WORKMEN & SUPERVISORY PERSONNEL:**
- The following are the responsibilities of the contractor in respect of observance of local laws, employment of personnel, payment of taxes etc:
- 2.23.29.1** The contractor shall engage sufficient staff to maintain the required rate of progress and quality of workmanship. If unskilled workers are required to be engaged, the same shall be engaged, as far as possible, from local areas in which the work is being executed. Claim for idle labour/machinery due to non-supply of any material by BHEL or for any other reasons will not be entertained. During the continuance of this contract, the contractor shall have due regard to all local festival, religious events and other customs, in all his dealings with the local labour for the time being employed on or in connection with the work.



- 2.23.29.2** The Contractor shall comply with all local, state and central laws, statutory rules, Regulations, etc., such as: the payment of wages Act, the Minimum Wages Act, The Workmen's Compensation Act, The Employer's Liability Act, The Industrial Disputes Act, The Employees Provident Fund Act, Employees State Insurance Scheme, The Contract labour (Regulations and Abolition) Act, 1970 and other Acts, Rules and Regulations for labour as may be enacted by the Government during the tender of the Contract and having force or jurisdiction at site. The contractor will be required to seek registration, if required, as per local laws. The contractor shall give to the local governing body, police and other concerned project site authorities all such notice (s) as may be required under law.
- 2.23.29.3** The Contractor shall obtain independent license under the Contract Labour (Regulations and Abolition) Act, 1970 and its amendments from the concerned authorities based on the certificate (Form V) issued by the Principal employer / customer.
- 2.23.29.4** The contractor shall pay all taxes, fees, license charges which may be him or otherwise as deemed fit.
- 2.23.29.5** The contractor shall make all arrangements and shall also meet all expenses in connection with his workmen's qualification / re-qualification test(s) etc at site.
- 2.23.29.6** All safety rules and codes are applicable to work shall be followed without any exception
- 2.23.29.7** The contractor shall arrange to provide guards and prominently display caution notices, in unsafe and hazardous area.
- 2.23.29.8** The contractor shall be responsible for the provision of health and sanitary as described arrangements in the contract labour Regulations and Abolition Act, 1970 and its amendments.
- 2.23.29.9** The contractor shall be responsible for safety precautions as may be required for safe and satisfactory execution of the contract.
- 2.23.29.10** All safety rules and codes applied by BHEL/its customer at site shall be observed by the contractor and his workmen without exception. The contractor shall be responsible for the safety of the equipment/material and work to be performed by him and shall maintain all lights, fencing guards, signs etc. or other protections necessary for the purpose. Contractor shall also take such additional precautions as may be indicated from time to time by the Site-In-Charge, with a view to prevent pilferage, accidents, fire hazards etc. Suitable number of clerical staff, watch and ward staff & storekeepers to take care of equipment, material, construction tools and tackles shall be posted at site by the contractor till the completion of the work. The contractor shall arrange for such safety devices as are necessary for this type of work and carryout the requisite site test of handling equipment, lifting tools, tackles etc. as per usual standards and practices.



- 2.23.29.11** The contractor shall ensure proper accommodation including adequate medical facilities for the personnel employed by him. Customer on chargeable basis can extend these facilities to contractor during project tenure.
- 2.23.29.12** The contractor will be directly responsible for payment of wages to his workmen. A pay-roll sheet giving details of all payments made to the workmen duly signed by the contractor's representative shall be furnished to BHEL for record purpose.
- 2.23.29.13** No idle labour charges will be admissible in the event of any stoppage of work resulting in the contractor's workmen being rendered idle due to any reason at any time.
- 2.23.29.14** The contractor shall furnish fortnightly labour deployment report indicating the classification and number of workmen engaged, date-wise and category-wise. Besides, the contractor shall also furnish progress reports on work at regular intervals as required by the Site-In-Charge.
- 2.23.29.15** The contractor has to ensure that the people deployed by them restrict their movement in the area earmarked for the project. For movement in area other than earmarked for project prior permission of BHEL Site-In-Charge is required. The contractor shall abide by all the rules and regulations of the power station.
- 2.23.29.16** Gate Pass for entry into power station would be required for all the persons deployed by the contractor at site. Special permission would be required for working beyond normal working hours. The contractor shall be arranging the passes and working permission beyond normal working hours on their own. BHEL Site-In-Charge shall provide necessary help and guidance for the same. Normal working hours in the plant is 8 hours.
- 2.23.29.17** The Contractor shall deploy all skilled, semi-skilled and unskilled workers and should hold valid certificates wherever necessary. The contractor shall deploy only experienced supervisory staff to carry out the erection work and control his workmen. BHEL reserves the right to insist on removal of any employee of contractor. In the event of increasing or decreasing the category of workers, supervisors the contractor shall obtain the prior approval of BHEL's site-in-charge.
- 2.23.29.18** The contractor will get Form-V from customer for obtaining labor license.

2.24.0 STRIKES AND LOCKOUTS :

- 2.24.1** The contractor will be solely responsible for all disputes and other issues connected with his workmen. In the event of contractor's workmen resorting to strike or the contractor resorting to lockout and, if the strike or lockout so declared is not settled within a period of one month, BHEL shall have the right to get the work executed employing its own men or through other agencies or both. The cost incurred by BHEL in this regard shall be recovered from the contractor.



- 2.24.2** For any purpose whatsoever, the employees of the contractor shall not be deemed to be in the employment of BHEL.

2.25.0 FORCE MAJEURE

- 2.25.1** The following shall amount to force majeure conditions: Acts of God, act of any Government, War, sabotage, riots, civil commotion, police action, revolution, flood, fire, cyclone, earthquake and epidemic and other similar causes over which the Contractor has no control.

- 2.25.2** If the Contractor suffers delay in the execution of the Contract, due to delay caused by force majeure conditions, as defined above, the agreed time for completion of the work covered by this contract shall be extended by a period of time equal to the period of the delay, provided the Contractor immediately reports to BHEL in writing the causes for the delay. The Contractor shall not be eligible for any compensation on account of any extension in time of completion given to Contractor due to force majeure conditions.

2.26.0 SETTLEMENT OF DISPUTES :

- 2.26.1** Except as otherwise specifically provided in the contract all disputes concerning questions of fact arising under the contract shall be decided by the Site-In-Charge subject to a written appeal by the contractor to the Site-In-Charge, whose decision shall be final to the parties hereto.

- 2.26.2** Any disputes or differences including those considered as such by only one of the parties arising out of or in connection with the contract shall be to the extent possible settled amicably between the parties.

- 2.26.3** If amicable settlement cannot be reached, then all disputed issues shall be settled by arbitration as provided in relevant clause.

2.27.0 ARBITRATION & CONCILIATION

2.27.1 ARBITRATION :

- 2.27.1.1** Except as provided elsewhere in this Contract, in case Parties are unable to reach amicable settlement (whether by Conciliation to be conducted as provided in Clause 2.27.2 herein below or otherwise) in respect of any dispute or difference; arising out of the formation, breach, termination, validity or execution of the Contract; or, the respective rights and liabilities of the Parties; or, in relation to interpretation of any provision of the Contract; or, in any manner touching upon the Contract (hereinafter referred to as the 'Dispute'), then, either Party may, commence arbitration in respect of such Dispute by issuance of a notice in terms of section 21 of the Arbitration & Conciliation Act, 1996 (hereinafter referred to as the 'Notice'). The Notice shall contain the particulars of all claims to be referred to arbitration in sufficient detail and shall also indicate the monetary amount of such claim. The arbitration shall be conducted by a sole arbitrator to be appointed by the Head of the BHEL Bhopal unit issuing the Contract within 60 days of receipt of the complete Notice. The language of arbitration shall be English. The Arbitrator shall pass a reasoned award. Subject as aforesaid, the provisions of Arbitration and Conciliation Act



1996 (India) or statutory modifications or re-enactments thereof and the rules made thereunder as in force from time to time shall apply to the arbitration proceedings under this clause. The seat of arbitration shall be Bhopal. The Contract shall be governed by and be construed as per provisions of the laws of India. Subject to this provision 2.27.1.1 regarding ARBITRATION, the principal civil court exercising ordinary civil jurisdiction over the area where the seat of arbitration is located shall have exclusive jurisdiction over any DISPUTE to the exclusion of any other court.

In case of Contract with Public Sector Enterprise (PSE) or a Government Department, the following shall be applicable:

2.27.1.2

In the event of any dispute or difference relating to the interpretation and application of the provisions of commercial contract(s) between Central Public Sector Enterprises (CPSEs)/ Port Trusts inter se and also between CPSEs and Government Departments/Organizations (excluding disputes concerning Railways, Income Tax, Customs & Excise Departments), such dispute or difference shall be taken up by either party for resolution through AMRCD (Administrative Mechanism for Resolution of CPSEs Disputes) as mentioned in DPE OM No. 4(1)/2013-DPE(GM)/FTS-1835 dated 22-05-2018 as amended from time to time.

The cost of arbitration shall initially be borne equally by the Parties subject to the final allocation thereof as per the award/order passed by the Arbitrator.

Notwithstanding the existence of any dispute or differences and/or reference for the arbitration, the Contractor shall proceed with and continue without hindrance the performance of its obligations under this Contract with due diligence and expedition in a professional manner unless the dispute inter-alia relates to cancellation, termination or short-closure of the Contract by BHEL.

CONCILIATION:

If at any time (whether before, during or after the arbitral or judicial proceedings), any Disputes (which term shall mean and include any dispute, difference, question or disagreement arising in connection with construction, meaning, operation, effect, interpretation or breach of the agreement, contract), which the Parties are unable to settle mutually, arise inter-se the Parties, the same may, be referred by either party to Conciliation to be conducted through Independent Experts Committee (IEC) to be appointed by competent authority of BHEL from the BHEL Panel of Conciliators.

Notes:

1. No serving or a retired employee of BHEL/Administrative Ministry of BHEL shall be included in the BHEL Panel of Conciliators.
2. Any other person(s) can be appointed as Conciliator(s) who is/are mutually agreeable to both the parties from outside the BHEL Panel of Conciliators.

The proceedings of Conciliation shall broadly be governed by Part-III of the Arbitration and Conciliation Act 1996 or any statutory modification thereof and as provided in Procedure 2.3 to this GCC. The Procedure 2.3 together with its Formats will be treated as if the same is part and parcel hereof and shall be as effectual as if set out herein in this GCC.

The Contractor hereby agrees that BHEL may make any amendments or modifications to the provisions stipulated in the Procedure 2.3 to this GCC from time to time and confirms that it shall be bound by such amended or



modified provisions of the Procedure 2.3 with effect from the date as intimated by BHEL to it.

TAXES: Refer annexure-T for tax related compliance.



NIT No.: ESH/MUKERIAN #2/T-01

Renewal & Replacement of Wound Stator , Replacement of Existing Rotor Poles with New Poles having F-class insulation and Capital Maintenance of Machine No. 2 (15 MW) at Power House No. 1 of Mukerian Hydel Project Stage-I , Punjab

PART-1: TECHNICAL BID
Section 3.0
SPECIAL TERMS AND CONDITIONS



- 3.1** The Special terms and conditions given here supersede the relevant terms & conditions given in Instruction to tenderers and General Terms and Conditions.
- 3.2** **STRIKES AND LOCKOUTS:** The contractor will be solely responsible for all disputes and other issues connected with his workmen. In the event of contractor's workmen resorting to strike or the contractor resorting to lockout and, if the strike or lockout so declared is not settled within a period of one month, BHEL shall have the right to get the work executed employing its own men or through other agencies or both. The cost incurred by BHEL in this regard shall be recovered from the contractor.
- 3.3** **NO DEVIATION IN ANY OF THE TENDER TERMS SHALL BE ACCEPTABLE.**
- 3.4** This section of the tender defines the scope of the contractor's work other than as specified in the Technical Specifications. The requirement and conditions mentioned in this section are in addition to what are stated in "Instructions to Tenderers", "General terms and conditions" & "Technical Specifications".
- 3.5** **In case of any conflicting provisions given in different sections of the tender following shall be the order of preference forming the basis for arriving at a conclusion :**
- A) **Description in schedule of quantities of price schedule**
 - B) **Technical Specifications**
 - C) **Special Conditions if any**
 - D) **Drawings**
 - E) **General terms & conditions**
- 3.6** The bidders are advised to take into account all factors and any fluctuations in the market rates etc. having effect on prices. No delay will be accepted and no claim will be entertained on this account after acceptance of the tender or during the currency of the contract. It is advisable that the bidders visit the site prior to bid submission.
- 3.7.0** **NATURE OF JOB:**
- 3.7.1** **The job tendered out comprises of Renewal & Replacement of Wound Stator , Replacement of Existing Rotor Poles with New Poles having F-class insulation and Capital Maintenance of Machine No. 2 (15 MW) at Power House No. 1 of Mukerian Hydel Project Stage-I , Punjab.**
- 3.7.2** Bidder should visit the site before submitting their offer and make sure that they understand the working environment, present state of the structures, availability of original documents with our customer, local rules, laws and regulations etc. A certificate to this effect should be submitted by the bidder as per format given at Annexure "J".
- NOTE: BHEL shall not accept any claim arising out of above factors.**



- 3.8.0 QUALIFYING CRITERIA:** The bidders should fulfil following qualifying criteria:
- 3.8.1** The bidder should have the successful experience of the following points during last seven years ending on 15/12/2019:-
- A) Installation and erection of new generator and turbine of hydro power plant or reversible pump turbine generator of rating above 15 MW during last seven years ending on 15/12/2019
 - B) Successful execution of capital maintenance or major overhauling of Kaplan turbine of rating above 6 MW or any other hydro turbine rating above 15 MW
- 3.8.2** The bidder should have executed the work of above nature as per clause no 3.8.1 during last seven years ending on 15/12/2019 for valuing either of the following:
- a) Three works each valuing not less than Rs. 25.92 Lacs
 - b) Two works each valuing not less than Rs. 32.40 Lacs
 - c) One work valuing not less than Rs. 51.83 Lacs
- 3.8.3** The bidder should have average annual financial turnover not less than Rs 19.44 Lacs during the last 3 years, ending 31st March,2019.
- 8.8.4** Self-attested Audited Balance Sheet and P/L Account for last three years to be submitted in fulfilment of this criterion.CA certificates to be enclosed.
- 3.8.5** The bidder shall not be black listed/ prohibited for doing the business for any BHEL unit or M/s PSPCL as on the date of submission of this tender.
- 3.8.6** Technical experience and financial resources of any subcontractor/subsidiary company /associate group shall not be taken into account in determining the Bidder's compliance with the qualifying criteria.
- 3.8.7** **The bid can be submitted by an individual party or a Joint Venture of not more than two parties. Necessary certificates and documents required for evaluation are required to be submitted in fulfilment of above criteria. (Details of Joint Venture are given under clause no. 3.27 below).**
- 3.8.8** BHEL is accredited to quality management system (ISO 9001: 2008). There by bidder has to successfully perform the work with quality standard / norms under BHEL guidance.
- 3.9.0 Other Information's to be submitted by the bidder:** The bidder should submit following duly signed and stamped along with offer
- 3.9.1** No Deviation Certificate (Technical) as per Annexure "H" of Instruction to Tenderers.
- 3.9.2** No Deviation Certificate (Commercial) as per Annexure "I" of Instruction to Tenderers.



- 3.9.3** Copy of PAN No.
- 3.9.4** Copy of GST No.
- 3.9.5** An attested copy of the Power of Attorney, in case an individual other than the sole Proprietor / Director / Partner signs the tender.
- 3.9.6** Documents in support of type of firm.
- 3.9.7** Financial viability statement as per Annexure “C” of Instruction to Tenderers with supporting documents.
- 3.9.8** Certificate confirming knowledge about site condition as per Annexure “J” of Instruction to Tenderers.
- 3.9.9** Confirmation of participation in Reverse Auction Process as per “Annexure – K”
- 3.10.0** **SCOPE OF WORK, MAN POWER & ARRANGING TEST EQUIPMENTS FOR ALL THE TESTS AT SITE:**
- 3.10.1** Providing man power and special testing equipment / machine as per requirement of site.
- 3.10.2** Providing minimum work force at site along with necessary tooling and machine during the duration of work is the responsibility of the contractor.
- 3.10.3.0** **Brief scope of work is as follows :-**
- 3.10.3.1**
- Building of new stator at service bay with new frame, new core, new stator bars, new instrumentations etc.
 - Conducting core consolidation & core Flux test and HV tests at various stages of stator building.
 - Dismantling of old stator parts like stator bars, core, instrumentations and stator frame and shifting and stacking of old dismantled stator items at service bay in - proper packaging for the transportation of the same in customer store.
 - Dismantling generator rotor. Lifting out the rotor and segregating its items as reusable & scrap.
 - Rotor poles removal and replacement of old coils with new coils. Impedance testing, HV Testing.
 - Replacement of Brake & jack system , testing etc.
 - Replacement of CGL system and piping etc.
 - Installation of CO2 system and piping etc.
 - Replacement of HS lube system, thrust pads, pumps, pipings etc . Replacement of all nut, bolts.
 - Complete overhauling / capital maintenance of complete machine.
 - Runner welding at damage portions and rectification work, testing etc.
- 3.10.3.2** Cleaning, grinding and painting of all re-usable items and their proper stacking.
- 3.10.3.4** Assembly of thrust bearing disc with shaft considering the required rectification in TB disc by using re-usable items / new items.
- 3.10.3.5** Complete cleaning of stator & rotor, replacing of defective insulation sleeves/packers if any.
- 3.10.3.6** Necessary servicing work of generator & turbine including bedding of guide vanes, leveling, alignment & centering.
- 3.10.3.7** Overall cleaning, retightening of loose components of the machine, dry out of machine, IR & testing.



- 3.10.3.8 Box-up activities.
- 3.10.3.9 Pre commissioning / commissioning tests and final running of machine.
- 3.10.3.10 Handing over of the machine to customer after 72 hrs of trial run.
- 3.10.3.11 All test equipment's and T & P shall be in the contractor scope
- 3.10.3.12 **Note: - For detail scope of work, refer technical specification ESH/MUKERIAN #2/T-01/ part-1: Technical specification**

3.11.0 COMPLETION SCHEDULE:

- 3.11.1 On intimation by BHEL through Fax or Telegraphically for site opening, the contractor has to make initial mobilization of his materials, resources and workforce so as to commence the work **within 15 (fifteen) days** from intimation (since the work is to be done on priority/urgent basis). Further mobilization of fresh resources and augmentation of existing resources shall be done in consultation with BHEL in all the area as covered in scope of work.
- 3.11.2 The total work under the scope should be completed **within 7 months** from the date of commencement of work (i.e **4 months for building of new stator at service bay and 3 months from date of shutdown provided by customer till handing over machine to customer after 72 hrs trial run after synchronization of machine**).
- 3.11.3 **NOTE:** Completion time is the essence of the contract. Hence the contractor may be required to arrange working in extended working hours/ round the clock working to achieve scheduled completion time.
- 3.11.4 For working on extended hours/ Sundays/ holidays, a written permission has to be obtained from the customer well in advance.

3.12.0 PRICE SCHEDULE:

- 3.12.1 Please refer to the Price Schedule. Price bid should be submitted strictly as per the enclosed price schedule. Any deviation w.r.t. price schedule is not acceptable and the offer having deviation is liable to be rejected. **Rates quoted by the bidder against schedule items shall remain firm.**
- 3.12.2 Price shall include all taxes/Duties/Royalties/Octroi/Freights applicable as on date of submission of tender except GST. Any new tax introduced in future shall be considered as applicable
- 3.12.3 **GST shall** be reimbursed to the contractor at actual at prevailing rate at the time of execution of work against documentary evidences.



- 3.12.4** No claim shall be admissible on account of revision in rate of existing taxes & duties (except GST) subsequent to bid submission. However, if any new taxes & duties are introduced subsequent to bid submission and during the currency of the contract including its extension if any for the reasons not attributable to the contractor, the same shall be reimbursed at actual against documentary evidence of remittance by the contractor. In case the contract period is extended for the reasons attributable to the contractor, no such reimbursement shall be made during extended period.
- 3.12.5** Income Tax shall be deducted at source (TDS) as per prevailing rules and copy of TDS shall be provided to contractor.
- 3.12.6** **Note: - Claim for reimbursement of GST pertaining to running bill should be submitted along with running bills.**
- 3.13.0** **EVALUATION OF THE OFFER AND ISSUE OF WORK ORDER :**
- 3.13.1** The bidder shall submit complete price of the package.
- 3.13.2** Evaluation of the offer will be strictly based on information submitted by the bidder. In view of this, the bidder is requested to go through the tender documents carefully and furnish all details clearly.
- 3.13.3** **Total price of the package shall be compared for the purpose of arriving at L-1.**
- 3.13.4** Based on the techno-commercial evaluation and priced bids, the successful bidder shall be awarded the contract for the complete package.
- 3.13.5** **No condition or deviations allowed in price bid.**
- 3.13.6** Work is indivisible in nature and shall be awarded to a single party.
- 3.13.7** **BHEL reserves the right to go for a Reverse Auction instead of opening the sealed price bids, which will be decided after the techno-commercial evaluation.** The bidder is required to communicate their consent for the same as per Reverse Auction **Annexure-K** for reference.
- 3.14.0** **TERMS OF PAYMENT:**
- 3.14.1** Progressive payment shall be made after completion work as per price schedule and is subject to the deductions towards Security Deposit, Income Tax with surcharge, any other tax or levies applicable in the state and recoveries towards materials/services rendered on chargeable basis, penalty and LD, if applicable.
- 3.14.2** All the payments due to the Contractor will be made through Electronic Fund Transfer (EFT). For EFT facility the successful bidder is required to submit the details duly endorsed by their bankers in the prescribed proforma as enclosed at **Annexure-R**. Normally payment of bills takes about 60 days from the date of receipt of bills at Bhopal office duly verified by Site-In-Charge.
- 3.14.3** **Note: Advance Payment – BHEL does not give advance as a policy.**



3.15.0 EXTRA/ADDITIONAL ITEMS OF WORK:

3.15.1 Any **NEW ITEM** of work which is explicitly not as per the scope envisaged in the tender but found essential during execution of the contract for satisfactory completion of the total work, it will come under the ambit of Extra Item of Work. In case such extra item is executed, the rate for the same shall be determined in the following ways and in the same priority:

3.15.1.1 The rate for such extra item shall be derived from the nearest possible item or group of items of the awarded price schedule.

3.15.1.2 If the derivation of rate of an extra item is not possible as per a) above, the same shall be derived from any order placed by BHEL in last 1 year for the same item either on the same vendor or on any one else in the vicinity of 100 kilometer of project site.

3.15.1.3 In case of failure by all the above three clauses i.e. 3.15.1, 3.15.1.1 and 3.15.1.2, the rate for extra item shall be derived on prevailing market rates and on actual basis by observing the consumption of materials (with permissible wastage as per standard practice), deployment of labour's and other incidentals with 15 % as contractor's premium and overheads. For this purpose, the contractor has to maintain and produce proper record duly certified by BHEL Site-In-Charge. Decision of BHEL in this regard shall be final and binding on the contractor.

3.16.0 SUSPENSION AND CANCELLATION OF WORK :

3.16.1 BHEL reserves the right to suspend and restart execution of the contract without invalidating the provisions of the contract. Orders for suspension or restart of the contract will be issued by BHEL to the contractor in writing. In such case, the time for completion of the contract will be extended for a period mutually agreed to between the parties. **No price variation on this account shall be admitted.**

3.16.2 In general, no order shall be cancelled after the issue of the order or the understanding to proceed with the work. However, in the event of such cancellation of contract for the reasons not attributable to the contractor after commencement of the work, BHEL shall pay the Contractor compensation for the loss of profit on this account, in addition to the expenses incurred by the contractor in respect of the contract.

3.17.0 INSURANCE:

3.17.1 It shall be the sole responsibility of the contractor to obtain transit insurance for envisaged scope of supply and get insured the property, materials, machineries, tools & tackles etc. belonging to him.

3.17.2 It shall be the sole responsibility of the contractor to insure his workmen against risks of accidents and injury while at work as required by the relevant rules and to pay compensation, if any, to them as per Workmen's Compensation Act. The work will be carried out in a protected area and all the Rules and Regulations of BHEL / its customer in the project Area which are in force from time to time shall be followed by the contractor.



- 3.17.3** If due to contractor's carelessness, negligence and / or non-observance of safety and other precautions, any accident / injury occurs to other persons / public, damage to BHEL's / its customer's property and/or personnel occurs, and if BHEL is unable to recover in full its claim from the Insurance Company, the deficit will be recovered from the contractor. The contractor shall be responsible for necessary compensation and other expenses in full, if so decided by the appropriate authority.
- 3.17.4** It shall be the responsibility of the contractor to provide security arrangements for the equipment/materials belonging to BHEL / its customer & handed over to the contractor for Transportation / erection till these are taken over by BHEL or are returned to BHEL / its customer's Stores.
- 3.18.0** **PENALTY FOR DELAY:**
- 3.18.1** The total work under scope is to be completed within the completion time mentioned under Clause 3.11.2 above. Required approval, drawings and material in scope of customer/BHEL shall be made available to contractor in time.
- 3.18.2** Delay in completion of the work under scope that may take place beyond contractual schedule OR within any extension for the reasons attributable to the contractor shall be subject to imposition of **PENALTY at the rate of 0.5 % of the contract value per week** of delay or part thereof subject to maximum ceiling of 10% of the contract value. GST on penalty shall be charged extra
- 3.19.0** **DEFECT LIABILITY/WARRANTY:**
- 3.19.1** The warranty period for the work executed shall be for a period of **12 months commencing immediately from the date of completion** of the total package/handing over of the units.
- 3.19.2** In case of any deficiencies in the workmanship, which is detected before the expiry of the warranty period, the contractor on notification by BHEL shall rectify or remedy the defects at his own cost and provisions of this clause shall apply to the portions of the work so replaced or renewed until the expiration of 06 months from the date of such replacement or renewal or the expiration of the original warranty period whichever is later, subject to minimum 05 days time is provided for remobilization of site and shut down of required duration is made available. The repairs of the defective work shall be done by the contractor within a reasonable time to be decided mutually. If any defects be not remedied within a reasonable time, BHEL may proceed to do the work after giving 30 days notice to the contractor at the reasonable price and debit the cost to the contractor, but without prejudice to any other rights which BHEL may have against the contractor in respect of such defects. The new warranty after repairs shall be for 06 months from the date of commissioning or original warranty whichever is later.



- 3.19.3** During warranty period the contractor shall be liable to repair or replace any defective work that may develop in his own workmanship or those of his subcontractors and arising solely from faulty workmanship. The contractor's obligation against the above clause shall be option to replace or repair at site. All transportation, insurance and other charges for carrying out remedy to the defective works shall be borne by the contractor.

The acceptance of the work by the Site-In-Charge shall in no way relieve the contractor of his obligation under this clause.

3.20.0 TERMINATION OF THE CONTRACT:

"No order shall be terminated after issue of the order or the understanding to proceed with the work except if desired by the Customer or Government of India. In the event of such cancellation, the Contractor shall be paid for all the work either fully or partly executed prior to the date of termination and the commitments entered into and expenses incurred for the execution of the contract as on the date of such termination. Nothing extra in addition to above shall be paid to the contractor in the event of such termination.

3.21.0 EXTENSION FOR DELAY :

- 3.21.1** If the works be delayed due to Force majeure or Delay on the part of the other contractors or tradesmen engaged by the BHEL in executing work not forming part of the contract, or Any other cause which, in the absolute discretion of BHEL is beyond the contractor's control then upon the happening of any such event cause delay, the contractor shall immediately give notice thereof in writing but shall nevertheless use constantly his best endeavors to prevent or make good the delay and shall do all that may be reasonably required to the satisfaction of BHEL to proceed with the work.

- 3.21.2** Requests for extension of time, to be eligible for consideration shall be made by contractor in writing within fifteen days of the happening of the event causing delay. The contractor may also, if practicable, indicate in such a request the period for which extension is desired, the working plan for remaining work.

- 3.21.3** In any such case Site-In-Charge, BHEL or any other officer authorized by BHEL may give a fair and reasonable extension of time for completion of the work. Such extension (Grant/Denial) shall be communicated to the contractor by the Site-In-Charge in writing, within 1 (One) month of the date of receipt of such request by the Site-In-Charge

- 3.21.4** **NOTE: On account of this No additional compensation of any kind shall be admissible.**

- 3.22.0 STATUTORY REQUIREMENT :** It shall be the sole responsibility of the contractor to obtain all necessary statutory sanctions, approvals, Licence, Permits, & Certificates etc. as may be required to execute the work as envisaged in the scope. BHEL/Customer shall only provide all necessary assistance in obtaining such sanctions, approvals, licence, permits etc.

3.23.0 FACILITIES TO BE PROVIDED BY BHEL/CUSTOMER :



- 3.23.1 Construction Office and Stores:** Depending upon the availability and requirement, the space for construction of office, stores shall be provided to the contractor. Within two weeks of completion of the contract, the contractor will have to remove all such temporary structures and handover the space made available to the contractor in a clean, levelled and tidy condition
- 3.23.2 Residential Accommodation and transportation:** All transportation and accommodation arrangements for staff deployed by the contractor shall be the responsibility of the contractor at his own expenses. BHEL shall not provide any such above arrangement / Space etc. whatsoever.
- 3.24 Entry Passes :** Upon contractor request Customer shall issue entry passes for the contractor's staff during normal/extended working hours including Sunday and holidays, depending upon requirement of work
- 3.25 Tools, Tackles & Equipment's:-** All tools & Tackles and consumables required is given in Annexure-'Q' but not limited to this list (**only for guidance**) for the satisfactory execution of the job shall be arranged by the contractor at free of cost. All measuring instruments, tools and tackles should be tested periodically and contractor shall also produce necessary certificate and proof of having tested & calibrated from certified agencies. List of tools, tackles & equipment's of reputed manufacturers with proper Test / Calibration Certificates to be arranged by the contractor at his own cost.
- 3.26 Joint Venture :** A joint venture (JV, sometimes 'J-V') is a legal entity formed between two parties to undertake an economic activity together. Thus, a joint venture may be defined for present purposes as any arrangement whereby two or more parties co-operate in order to run a business or to achieve a commercial objective. This co-operation may take various forms and may involve the running of a business on a long-term basis or on the realization of a particular project. The business may be entirely new, or it may be an existing business, which it is believed will benefit from the introduction of a further participant.
- 3.27 Agreement:** There should be a Joint Venture agreement between two parties showing terms & conditions of Joint Venture. The parties to Joint Venture shall jointly and severally be liable to BHEL of all obligations of the Joint Venture. The parties to Joint Venture shall maintain their Joint Venture agreement till successful execution and completion of contract with BHEL. The Joint Venture shall submit a notarized Joint Venture agreement to BHEL at the time of submitting offer.

NIT No.: ESH/MUKERIAN #2/T-01

Renewal & Replacement of Wound Stator , Replacement of Existing Rotor Poles with New Poles having F-class insulation and Capital Maintenance of Machine No. 2 (15 MW) at Power House No. 1 of Mukerian Hydel Project Stage-I , Punjab

PART-1: TECHNICAL BID
Section 4.0
TECHNICAL SPECIFICATION



4.1 INTENT OF SPECIFICATION

4.1.1 This specification is intended for receipt of material at site, unloading at site, storage, transportation of material to work site, erection, providing testing equipment's for all the tests and testing and commissioning of mechanical systems, electrical, instrumentation and control as given under scope of work.

4.1.2 Any item / equipment not specifically mentioned in the contract / technical specification but required for completeness and safe / normal operation of the listed equipment system, are deemed included in the contract without any commercial implication. During the contract execution any ambiguity / contradiction / difference of opinion arising will be interpreted by the BHEL/Customer / his consultant and his decision shall be binding on the contractor.

4.2 SCOPE OF SERVICES include but not limited to –

4.2.1 Building of new stator at service bay with new frame, new core, new stator bars, new

4.2.2 Conducting core consolidation & core flux test and HV tests at various stages of stator building.

4.2.3 Dismantling of old stator parts like stator bars, core, instrumentations and stator frame and shifting and stacking of old dismantled stator items at service bay in proper packaging for the transportation of the same in customer store.

4.2.4 Dismantling generator rotor. lifting out the rotor and segregating its items as reusable & scrap.

4.2.5 Rotor poles removal and replacement of old coils with new coils. impedance testing, HV testing. Replacement of brake & jack system, testing etc.

4.2.6 Replacement of CGL system and piping etc.

4.2.7 Installation of CO2 system and piping etc. Replacement of HS lube system, thrust pads, pumps, piping etc. Replacement of all nut, bolts

4.2.8 Complete overhauling / capital maintenance of complete machine. runner welding at damage portions and rectification work, testing etc.

4.3 SCOPE OF WORK:

Please note that only supervision of major installation & commissioning will be done by BHEL. However activities related to installation & erection has to be carried out by contractor as per the drawings. General tools to be provided by Erection agency.



- 4.3.1 General scope of supply and site works as per NIT:** The brief description of scope of the supply and work is as under:
- 4.3.2 Building New Stator at service bay:** The building of new Stator with new core and new winding in the new stator frame shall be carried out in the service bay and completed before handing over the machine to M/s BHEL for carrying out dismantlement and other activities. Existing stator frame will be replaced with new stator frame on existing civil foundation and levels. New Stator building with new frame, core, coils / bars will be done at service bay.
- 4.3.3 Rotor and rotor poles replacement:** Dismantlement of Rotor from Generator and shifting to Service bay, dismantlement of Rotor Poles from Rotor and fixing of new Rotor wound poles having F-Class insulation and interconnection in the Service Bay shall be done by the contractor. Wound pole assembly shall be tested as per relevant standards.
- 4.3.4** Replacement of existing brake jack assemblies complete with all accessories.
- 4.3.5** Replacement of complete HS Lubrication system along with modified thrust pads including spring mattress and replacement of guide pads.
- 4.3.6** Replacement of GB retaining sleeve.
- 4.3.7** Replacement of TG shaft coupling bolts and rotor coupling bolts
- 4.3.8** Complete overhauling of guide apparatus along with guide apparatus, resetting of GV bedding, replacement of GV bushes along with repair of bush housing. Replacement of all rubber seals, gaskets & O-ring in turbine like guide vanes & servomotors, replacement of Turbine guide bearing shell, replacement of Air Valve assembly.
- 4.3.9** Replacement of Dewatering valve, refilling valve and top cover air valve.
- 4.3.10 Complete overhauling and testing of runner, oil header system, and runner feedback mechanism.** Replacement of all seals of runner blades, replacement of Piston ring etc. Filling of cavities on runner hub and blades. Measurement of diameter of runner chamber and local correction thereof if required.
- 4.3.11 Replacement of complete CGL Centralized Greasing & Lubrication System.**
- 4.3.12 Replacement of old co2 system with new co2 system** by replacement of old co2 system along with accessories, piping, sensors etc. and manpower and T & P assistance during testing of CO2 system .
- 4.3.13** Replacement of shaft seal assembly along with shaft sleeve air seal, replacement of runner coupling bolts, repair and painting of all under water parts with suitable paint.
- 4.3.14** Replacement of instruments like DTTs, RTDs, flow relays, pressure gauges, temperature scanners, CO2 detectors including wiring and panel etc.



- 4.3.15** Replacement of all hardware upto size M-30 and 25% hardware above M-30 size.
- 4.3.16** Replacement of all cooling pipes, valves, cooling water pump set.
- 4.3.17** Replacement of bearing pads and bearing shell.
- 4.3.18** **Scope of R & M services at site:**
- 4.3.18.1** **Dismantling:** Scope of dismantlement covers all the activities required for the renewal and replacement of Stator frame, core & winding, replacement of Rotor poles, capital maintenance of the machine including Runner. However, the brief scope of dismantlement is as under
- 4.3.18.1.1** Draining and storage of oil from bearings, oil sump, pipe line, servomotors and runner.
- 4.3.18.1.2** Checking and recording of stator form, rotor form, air gaps of all the TGB/GGB/PMG, runner blades gaps, relative elevation of bottom bracket sole plates as well as generator sole plates and setting there of before dismantlement.
- 4.3.18.1.3** Dismantlement of oil header, connected pipelines, servo tubes, PMG and exciter assemblies followed by disconnection of all power & control cables with proper marking.
- 4.3.18.1.4** Dismantlement of all air & oil coolers.
- 4.3.18.1.5** Dismantlement of generator guide and thrust bearing, TGB, shaft gland seal, maintenance seal all associated accessories etc.
- 4.3.18.1.6** Dismantlement of Stator frame, core & winding and stack them properly in the Service bay. All precautions shall be taken to the extent possible during dismantlement of Stator frame so that dismantled stator frame may be used in another machine of similar rating & capacity.
- 4.3.18.1.7** Dismantlement of top, bottom brackets & all accessories of generator, rotor (decoupling and shifting in service bay) , rotor poles, bearings, stator core & winding, segregating items of stator as reusable & scrap and stacking the core and winding material in service bay.
- 4.3.18.1.8** Decoupling of TG coupling nuts/ bolts and holding the runner on holding device.
- 4.3.18.1.9** Dismantlement of servo tube removal of rotor and shifting of rotor in service bay.



- 4.3.18.1.10** Dismantlement of Thrust Bearing disc. Replacement with new TB pads, replacement of complete HS Lubrication system along with piping , pumps etc.
- 4.3.18.1.11** Recording of guide vane vertical/bedding and top/bottom clearances before dismantling.
- 4.3.18.1.12** Dismantlement of air valve, top cover pumps and accessories, sealing system, GV servo motors and connecting pipe lines, regulating ring assembly, guide vane link mechanism, bush housing etc. top cover, runner, GV apparatus including all bushes, guide vanes, CGL system etc.
- 4.3.19** **Inspection, testing refurbishment and other essential works:** General cleaning of all the dismantlement parts and identification of damaged parts.
- 4.3.20** Building up of new stator at service bay with new frame, new core, new coils/ bars, new instrumentations and core flux testing and HV testing etc before starting dismantling old stator. Installation of heat detectors along with wiring and panel.
- 4.3.21** Cleaning of rotor. Assembly of wound poles on rotor in service bay including inter connections, painting etc.
- 4.3.22** DP testing and UT of all bearing components and old pads.
- 4.3.23** DP testing of all welded joints of main parts i.e. top and bottom brackets, bearing housings, top cover etc.
- 4.3.24** Cleaning of air and oil coolers and testing.
- 4.3.25** Scrapping and blue matching of GGB and thrust pads with Journal and mirror surface respectively.
- 4.3.26** Cleaning of stator, rotor, exciter assembly, PMG assembly etc with suitable cleaning agent.
- 4.3.27** Replacement of Pump of cooling system, valves in cooling circuit and valves of air coolers pipe lines of stator, GGB and TGB cooling circuit
- 4.3.28** Painting of all metallic parts with suitable paints. BHEL is to include the quantity of various paints in their scope of supply.
- 4.3.29** Cleaning and painting of all cooling pipes with suitable primer & paints.
- 4.3.30** **Complete replacement of Old CO2 system by New system:** Complete replacement of CO2 based firefighting system for generator (common for all the units). The scope of work for new system is comprising of the following:
- 4.3.30.1** CO2 cylinder bank- 1 Set (Common for all 3 Units) One set of CO2 bank shall consist a)Set of CO2 Cylinders for main discharge - 1 Set, b) Set of CO2 Cylinders for delayed discharge - 1 Set
- 4.3.30.2** Fire Alarm Control Panel - 3 sets (1 set for each unit).
- 4.3.30.3** Smoke and Heat detectors - 3 Sets (1 set for each unit)



4.3.30.4 Piping, CO2 discharge Nozzles, Valves, Pressure switch, Electrical Cable and fittings along with all fixing and completion items – 3 Sets

4.3.30.5 Major site activities for above scope are as under:-

4.3.30.5.1 Installation of CO2 cylinder bank for main discharge

4.3.30.5.2 Installation of CO2 cylinder bank for delayed discharge

4.3.30.5.3 Installation of wire mesh enclosure for items at Sl. A & B

4.3.30.5.4 Installation of Fire alarm control panel – 3 sets

4.3.30.5.5 Installation of Heat & smoke detectors – 3 sets

4.3.30.5.6 Electrical cabling for above Sl. No. D & E

4.3.30.5.7 Installation of piping (32 & 25 NB) inside barrel for each unit up to CO2 bank through Generator floor. It included pipe fitting, fixing and other completing items.

4.3.30.5.8 Electrical cabling inside barrel, to CO2 control panel and final termination in the Control Room for above mentioned items.

4.3.31 Runner chamber and DT

4.3.31.1 Inspection and measurement of runner chamber diameter.

4.3.31.2 Measurement of thickness of runner chamber assembly using Ultrasonic gauge to record the deficiencies

4.3.31.3 Minor Repair of draft tube cone assembly, runner chamber, DT windows, pivot ring, stay ring, top cover and DT followed by surface preparation and Coating of Epoxy Zink rich primer & Paint on DT cone and DT.

4.3.31.4 Total estimated weld deposit for repair is turbine components are as per C-iii is 200 kg.

4.3.31.5 All Paints and primer are to be provided by customer free of cost

4.3.31.6 Replacement of dewatering and refilling valves if possible during execution

4.3.32 Guide Vane Apparatus and TGB Housing

4.3.32.1 Rectification of Guide Vanes that include repair of feather, bedding, Shaft and trunnion to the extent possible by welding, grinding and turning to meet the original/drawing dimensions. Attention shall be paid to the seating surface during repair.

4.3.32.2 Contractors scope includes machining at work shop for bushes ID to match guide vane trunnion and bush OD to match bush housing and pivot ring GV holes

4.3.32.3 Cleaning by Blasting with recommended material on feather portion of Guide Vane to remove dirt followed by coating with Epoxy Zinc rich primer and Epoxy paint.

4.3.32.4 Measurement of the diameters of all pivot holes, bush housings for deciding the outer diameters of all the three sets of guide vane bushes.



- 4.3.32.5 Rectification of pivot holes. Cleaning and repair of Bush housing including replacement of bushes and thrust washers and associated fasteners
- 4.3.32.6 Assembly of top and middle bushes in the guide vane bush housings.
- 4.3.32.7 Cleaning of greasing paths of bush housing with compressed air.
- 4.3.32.8 Coating for epoxy zinc rich paint on outer surface of bush housing.
- 4.3.32.9 Repair of Pivot Ring liner surface and stay ring all around the periphery by welding & grinding followed by epoxy primer and paint.
- 4.3.32.10 Cleaning of regulating ring with rust cleaner. PU paint coating on link, levers & regulating ring to avoid rusting.
- 4.3.32.11 Replacement of bushes and other parts envisaged in the scope of supply.
- 4.3.32.12 Replacement of Horizontal and Vertical bronze segment.
- 4.3.32.13 Repair of top cover liner surface all around the periphery by welding & grinding. Inspection of TGB housing and repair if required

4.3.33 Runner

- 4.3.33.1 Complete overhauling of existing runner, oil header system, runner feedback system, identification of damages on the blades of runner for locating any internal and external defects.
- 4.3.33.2 The rectification of the damaged portion of runner blades by way of welding, grinding and machining to the extent possible to build up the original profile..
- 4.3.33.3 The hydraulic and functional Test of existing runner assembly after overhauling in the service bay.
- 4.3.33.4 Valves pressure gauges and the oil pipeline shall be provided by PSPCL at site.
- 4.3.33.5 Activities like Chipping on Runner Cone, filling of cavities over runner body followed by coating oil resistance paint from inside and Epoxy Zinc rich primer and paint from outside is covered under the scope.

4.3.34 Servomotors and Air Valve

- 4.3.34.1 Dismantling of both the guide vane servomotors, carrying out a thorough cleaning of all the components, assembly of these servomotors with replacement of up seals and rubber cords, piston rings, fasteners etc.
- 4.3.34.2 Inspection of liner of servomotors and repair on the damaged areas, if any. However, in case of heavy damage, replacement of the same is envisaged under the scope of customer.
- 4.3.34.3 Pressure testing of servomotors.
- 4.3.34.4 Replacement of air valve.

4.3.35 Oil Header



Overhauling of oil header including replacement of gaskets, rubber cords/seals and other parts. Repair of oil header cap of unit by depositing material and machining.

4.3.36 Re-Assembly

- 4.3.36.1** Lowering of guide vanes, top cover and turbine shaft assembly along with runner.
- 4.3.36.2** Tightening of outer cover with new fasteners.
- 4.3.36.3** Assembly of guide vane bush housings, link levers, link mechanism etc, regulating ring, assembly of GV servomotors and connecting pipelines.
- 4.3.36.4** Installation of Centralized greasing system including panel, Dozer, feeders etc.
- 4.3.36.5** Adjustment of GV vertical and top/bottom clearance as per design.
- 4.3.36.6** Assembly of Air valve and connecting pipe lines etc.
- 4.3.36.7** Lowering of lower bracket.
- 4.3.36.8** Assembly of new brake/jack assembly,
- 4.3.36.9** HS lubricating system along with the modified thrust pads including rectification in Thrust Pad locking arrangement, if any, spring mattress etc.
- 4.3.36.10** Lowering of generator rotor assembly, upper bracket assembly.
- 4.3.36.11** Preparation of bearings for leveling and alignment.
- 4.3.36.12** Assembly of exciter, PMG, Oil header etc.
- 4.3.36.13** Alignment and dynamic Level of rotor assembly.
- 4.3.36.14** Coupling of generator shaft and turbine shaft assemblies.
- 4.3.36.15** Combined unit shaft axis alignment and dynamic levelling.
- 4.3.36.16** Measurement and recording of the magnetic axis centering of the generator. Checking the stator and rotor forms and correction if required.
- 4.3.36.17** Centering and alignment of unit.
- 4.3.36.18** Assembly of shaft sleeves of turbine and generator shaft.
- 4.3.36.19** Assembly of TGB&GGB and setting of clearances.
- 4.3.36.20** Rebabitted TGB shell is to be installed.
- 4.3.36.21** Assembly of shaft sealing system.
- 4.3.36.22** Installation of all RTDs and DTTs.
- 4.3.36.23** Assembly of Air and oil coolers
- 4.3.36.24** Reaming/dowelling/re-dowelling at various points is within the scope of Firm.



- 4.3.36.25** Setting of alpha-beta relationship.
- 4.3.36.26** Dismantlement of DT plate form, closing of DT and spiral case windows.
- 4.3.36.27** Complete box up of the unit.
- 4.3.36.28** Dry out of Generator stator/rotor.
- 4.3.37** **Testing and Commissioning**
- 4.3.37.1** Measurement of DC resistance of Stator and rotor winding.
- 4.3.37.2** Measurement of Impedance of Rotor winding in the service bay and after complete assembly.
- 4.3.37.3** Tan Delta testing of stator winding.
- 4.3.37.4** Measurement of IR and PI of stator and rotor winding.
- 4.3.37.5** OCC and SCC of generator.
- 4.3.37.6** Measurement and setting of bearing clearances
- 4.3.37.7** Heat Run Test
- 4.3.37.8** Testing of CO2 system (excluded from scope).
- 4.3.37.9** All the parameters required for study of system stability are to be supplied by the Firm.
- 4.3.37.10** Measurement of vibrations in all modes of operation and dynamic balancing of the unit if required. Balancing weights and fasteners if required shall be supplied by PSPCL.
- 4.3.37.11** Testing, calibration of new RTDs, DTTs etc before installation.
- 4.3.38** **General**
All consumables, cleaning agents, welding electrodes, O-rings, gaskets, general purpose fasteners up to M-24, stainless steel shims are in the scope of contractor. Any material required for temporary platform required is also within the scope of contractor
- 4.3.39** Erection & Testing of machine no. 2 will be supervised by the qualified and experienced Engineers and supervisors of the contractor
- 4.3.40** Quality Plan for the job has to be prepared before starting of Job and the same has to be got approved from BHEL.
- 4.3.41** Dismantlement and removal of existing Stator/Rotor parts etc. to service bay shall be responsibility of contractor. Removal shall be carried out under close supervision of site in-charge of BHEL/CUSTOMER. Transportation of scrap of dismantled material, if any, from service bay to O&M Store shall be responsibility of site in-charge of CUSTOMER.
- 4.3.42** All the new material shall be made available by Customer at work place /service bay as & when required for restoration /replacement.
- 4.3.43** All the old/damaged/unusable material of existing Generator emerged out of replacement with new one shall be stacked properly by contractor in the boxes to be provided by Customer. After handing over the material by contractor to customer in service bay, the boxes shall be moved from service bay and stored by customer.



4.3.44 Spare item which are to be replaced, like bushes fitted bolts/ dowels etc. are supplied with machining allowance. Contractor shall arrange necessary machining of these items locally.

4.3.45 Minor machining required during R & M works shall be arranged by contractor

4.3.48 Works shall be carried out by Customer before dismantling

4.3.48.1 Lowering of Intake DT Gates after stopping of machine.

4.3.48.2 Dewatering of Draft Tubes of Turbine.

4.3.48.3 Opening of manholes of Spiral casing and Draft Tube.

4.3.48.4 Erection of platform in DT Cone.

4.3.49 Post completion of Work by Customer

4.3.49.1 Building up all required air/oil pressures required for synchronization of machine.

4.3.49.2 Lifting of draft tube and lowering of Intake DT Gates.

4.3.50 Following items/ assemblies proposed to be supplied new for replacement of existing old & existing parts of the turbine and generator during the work execution are to be made available at service bay to the contractor before starting work

1. Turbine Section:

S/N	ITEM DESCRIPTION	QTY.
A)	GUIDE VANE APPARATUS	
1.	BUSHES FOR REGULATING RING	1 SET (24 NO.)
2.	BUSHES FOR G.V.LINK& LEVER	1 SET (24+24 NOS.)
3.	VERTICAL & HORIZONTAL BRONZE OF REGULATING RING & TOP COVER SEGMENT	1 SET OF 6 Pcs. 1 SET OF 6 Pcs.
4.	<ul style="list-style-type: none"> CUP SEAL 'O' RING Dia. 10*50 mtrs. Lg. * (50 METRES MINIMUM ORDER QTY.) 	<ul style="list-style-type: none"> 1 SET OF 24 Pcs. 50 mtrs*
5.	SHEAR PIN	1 SET OF 24 Pcs.
6.	CONCENTRIC PIN	1 SET OF 24 Pcs
7.	ECENTRIC PIN	1 SET OF 24 Pcs.
8.	GUIDE VANE BUSH (BOTTOM)	1 SET OF 24 Pcs.
9.	GUIDE VANE BUSH(MIDDLE)	1 SET OF 24 Pcs.
10.	GUIDE VANE BUSH(TOP)	1 SET OF 24 Pcs.



11.	GV BUSH HOUSINGS	5 NOS
12.	G.V. SERVO PISTON RING	4
13.	G.V. SERVO PISTON PACKING	2
14.	G.V. SERVO BUSH	2
15.	G.V. SERVO BUSH	2
16.	G.V. SERVO BUSH	4
17.	SERVO CUP SEALS	1 Set
18.	THRUST WASHER	1 SET (24Nos.)
19.	SS BOLT FOR DT MANHOLE DOOR HEX. HD. M24*2*50 LG	25
20.	SS JACK SCREW FOR DT MANHOLE DOOR M20*40 LG	2
21.	HEX. HD STEEL SCREW FOR SPIRAL MANHOLE DOOR(M30*2*65 LG.)	32
22.	JACKING SCREW FOR SPIRAL MANHOLE DOOR M20*70 LG.	2
23.	½"DRAIN VALVE FOR SPIRALMAN HOLE DOOR	1
B)	TURBINE	
24.	CGL SYSTEM COMPLETE WITH DOZERS FEEDERS PANEL ETC	1 SET
25.	All FASTNERS FOR OUTER TOP COVER	1 SET
26.	MAIN SHAFT SEAL SUPPORT QUADRANTS	1 SET(4 Quadrants)
27.	ROTATING SLEEVE QUADRANTS	1 SET (4 Quadrants)
28.	SEALING RING WITH NOZZLE	1 SET (1 NO.)
29.	SHAFT GLAND SEAL	1 SET
30.	RE BABITTIG OF DISMENTALEDTGB(Shell type)	1
31.	PIPING FOR COOLING CIRCUIT OF TGB	1 SET
32.	OIL CONNECTED HEAD:	
a	BRONZE BUSHES FOR OIL CONNECTING HEAD	One set
b	HALLPRENE FLUID SEAL FOR OIL CONNECTING HEAD	1

33.	DTT for TGB	2
34.	RTD for Oil sump of TGB	1
35.	FINISH PAINT TURBINE ITEMS	1 SET
36.	DEWATERING VALVE FOR SPIRAL CASING	1 NO
37.	DEWATERING VALVE COMPLETE WITH SHAFT FOR DT AND SUMP	1 SET
38.	TOP COVER AIR VALVE COMPLETE WITH PIPING	1 SET
39.	REGULATING RING SEGMENT	1 SET
40.	AIR VALVE ASSEMBLY COMPLETE	1 SET
41.	Turbine bearing oil level sensor with electrical contacts	1 SET
42.	Turbine top cover pump water level controls with probe & fixing arrangement	1 SET

2. Generator Section:

S/N	ITEM DESCRIPTION	QTY.
1.	STATOR FRAME ALONGWITH PRESSURE PLATES, STUDS ETC.	1 SET
2.	SET OF STATOR PUNCHING COMPLETE	1 SET
3.	STATOR WINDING COMPLETE	1 SET
4.	INSULATION ITEMS FOR STATOR WINDINGS	1 SET
5.	INSULATION ITEMS FOR ROTOR CONNECTIONS	1 SET
6.	CORE RTD	3 NOS.
7.	WINDING RTD	9 NOS.
8.	WOUND POLE ASSEMBLY COMPLETE WITH COIL OF F -CLASS INSULATION(SET OF 40 POLES)	1 SET
9.	SET OF POLE KEY AND SPRING COMPLETE	1 SET
10.	POLE SPRINGS (for all poles)	1 SET



11.	HEAT DETECTORS FOR CO2 SYSTEM COMPLETE WITH WIRING	1 SET
12.	CONTROL PANEL FOR CO2 SYSTEM SUITABLE FOR THREE MACHINES	1 NO
13.	SINGLE ACTING BRAKE & JACK ASSEMBLY	6 SETS
14.	PIPING, CONTROL PANEL, ASBESTOS FREE PADS	1 SET
15.	H.S LUBRICATION SYSTEM INCLUDING PIPING	1 SET
16.	HS PUMP CONTROL PANEL AND CONNECTIONS	1 SET
17.	MODIFIED THRUST PADS SUITABLE FOR HS LUBRICATION SYSTEM (SET OF 12 PADS)	1 SET
18.	24 Pts. TEMPERATURE RECORDER COMPATIBLE WITH PT-100	2 NOS.
19.	OIL VAPOUR SEAL (NEW TYPE OF FIBRE GLASS OIL VAPOUR SEAL)	1 SET
20.	GUIDE BEARING PADS (SET OF 24 PADS)	1 SET
21.	THRUST BEARING SPRINGS	316 NOS.
22.	BEARING RTD'S (Two for GGB, two for Thrust brg, one each for brg oil sump hot and cold bath)	6 NOS.
23.	COOLING WATER CIRCUIT RTD (Two for cooled air out let and two for hot air outlet)	4 NOS.
24.	DTT FOR BEARINGS (Two for GGB and Two for Thrust Brg)	4 NOS
25.	DTT FOR GEN AIR COOLERS	4 NOS
26.	DTT FOR WATER INLET AND OUT LET	2 NOS
27.	DTT FOR WATER OUTLET OF OIL COOLERS	1 NOS
28.	COUPLING BOLTS FOR TG SHAFT	1 SET
29.	COUPLING BOLTS FOR ROTOR AND GENERATOR SHAFT	1 SET
30.	VALVES OF AIR COOLERS	8 NOS
31.	IL PUMP SET FOR COOLING SYSTEM	1 SET
32.	GATE VALVE FOR WATER SUPPLY FROM SPIRAL CASING(150 NB)	1 NO
33.	GATE VALVES FOR COOLING CIRCUIT(100 NB)	2 NOS
34.	PIPING FOR STATOR, GGB AND TGBCOOLING	1 SET

	CIRCUIT	
35.	GGB RETAINING SLEEVE	1 NO
36.	GGBRETAING SLEEVE	1 NO
37.	Stator Heaters Set	1 SET
38.	Generator cooling water flowmeter with Electrical contacts	1 SET
39.	Generator Bearing Oil coolers cooling water flowmeter with electrical contacts	1 SET
40.	Generator bearing oil level sensor with electrical contacts	1 SET

3. Runner

S/N	ITEM DESCRIPTION	Unit	QTY.
1.	Any material required for complete overhauling i.e. piston ring, trunion seals, rubbers seals etc, and checking & maintaining the Runner's original profile	Lot	1
2.	Coupling bolts for turbine shaft and runner	SET	1

4. Mandatory Spares

S/N	ITEM DESCRIPTION	Unit	QTY.
1.	Stator coils with F-Class insulation	Nos.	40
2.	Rotor pole coils with F-Class insulation (one of each type)	Nos.	4
3.	Asbestos free pads (spare) for brake jacks	SET	1
4.	Stator slot wedges	Nos.	40
5.	REFILLING VALVE	Nos	1
6.	Set of Rotor Slings	SET	1
7.	Set of Stator Slings	SET	1

4.3.51 Tools for core building

Tools supplied by BHEL for Stator Core building tools and Sweep gauge shall be made available at site by customer.

4.3.52 Quality assurance plan: Site test and protocols shall be done as per the List below / approved QAP from Customer.



4.3.52.1 Generator:

4.3.52.2.1 Stator:

4.3.52.2.2 Stator diameter checking after assembly of stator frame

4.3.52.2.3 Slot checking by gauge

4.3.52.2.4 Core flux test and hot spot (Transformer & Cable along with instruments to be provided by customer)

4.3.52.2.5 Core Dia and height checking

4.3.52.2.6 UT of brazed joints

4.3.52.2.7 HV, IR test

4.3.52.2.8 TAN Delta test (Tan delta test kit shall be provided by customer)

4.3.52.3.1 Rotor Assembly:

4.3.52.3.2 Solder joints visual Inspection.

4.3.52.3.3 HV / IR, impedance test

4.3.52.3.4 Levelling and alignment

4.3.52.3.5 Bearing Clearance setting

4.3.52.4.1 Turbine:

4.3.52.4.2 Hydraulic testing of runner assembly

4.3.52.4.3 GV Servomotor stroking

4.3.52.4.4 Levelling, centering, and gape setting protocols.

4.3.52.4.5 Hydraulic testing of oil coolers

4.3.52.5.1 Commissioning

4.3.52.5.2 Customer shall carry out all commissioning activities of the machine and BHEL shall provide only manpower assistance during commissioning.

4.3.52.5.3 1 Pre-commissioning checks

4.3.52.5.4 2 Bearing Run

4.3.52.5.5 3 Dry out and Synchronization

4.3.52.5.6 4 SCC and OCC

4.3.52.5.7 5 Dynamic Balancing

4.3.53 T&P, Drawings/Documents to be provided by customer free of charge:

4.3.53.1 Motorized megger

4.3.53.2 Rectifier

4.3.53.3 HV test kit



- 4.3.53.4 Sweep gauge
- 4.3.53.5 Core flux test kit and cable
- 4.3.53.6 Rotor lifting device with tested slings of required capacity
- 4.3.53.7 Lifting devices & slings for balance items of turbine and generators, as required
- 4.3.53.8 Stools / stand for rotor
- 4.3.53.9 Special T&P of turbine and generator supplied by OEM along with original equipment
- 4.3.53.10 Special torque wrenches, spanners and torque tightening devices for coupling bolts of runner, turbine shaft and generator shaft etc.
- 4.3.53.11 Oil centrifuging machine
- 4.3.53.12 All assembly & erection drawings of turbine & generator, O&M Manuals etc.

- 4.3.54 **FACILITIES TO BE PROVIDED BY THE CUSTOMER FREE OF COST**
- 4.3.54.1 Mobile/ EOT crane with operator round the clock in safe operating condition.
- 4.3.54.2 Sleepers, Packers and special lifting devices.
- 4.3.54.3 Special tools like heavy spanners, torque wrenches, bearing pullers and other special tools supplied by the original manufacturer with the equipment.
- 4.3.54.4 Electricity for power and lighting, compressed air and water supply at convenient locations.
- 4.3.54.6 Equipment should be made available for starting the work duly disconnected from electrical and mechanical sources.
- 4.3.54.6 Adequate illumination for entire work area.
- 4.3.54.7 Full time coordinator.
- 4.3.54.8 Supply of all spares and materials, which require replacement, consumables, insulating materials, Varnishing, paints, thinners and rubber items, as required at work place.
- 4.3.54.9 Site stores for sub-contractor's use.
- 4.3.54.10 Site office facilities for BHEL.
- 4.3.54.11 Sufficient number unfurnished quarters for BHEL Subcontractor workers/ Supervisors on chargeable basis subject to availability.



NIT No.: ESH/MUKERIAN #2/T-01

Renewal & Replacement of Wound Stator , Replacement of Existing Rotor Poles with New Poles having F-class insulation and Capital Maintenance of Machine No. 2 (15 MW) at Power House No. 1 of Mukerian Hydel Project
Stage-I , Punjab

PART-1: TECHNICAL BID
ANNEXURES



ANNEXURE-A

COVERING LETTER

AGM (ESH)
ESH DIVISION
NEW HYDRO BLOCK, ANNEXE,
FIRST FLOOR,
BHEL, PIPLANI, BHOPAL M.P. – 462022

Dear Sir,

I/We hereby offer to carry out the work detailed in Tender Specification No. /-NIT No.:ESH/MUKERIAN #2/T-01, issued by Bharat Heavy Electricals Limited BHOPAL in accordance with the terms and conditions thereof.

I/We have carefully perused the following listed documents connected with the above work and agree to abide by the same: -

1. Instructions to Tenderers
2. General Terms and Conditions
3. Special Conditions
4. Technical Specifications
5. Price Schedule

I/We have deposited / forwarded herewith the Tender Fee and Earnest Money deposit. Details of Tender Fee and EMD payment are furnished in the check list.

EMD shall be refunded should our offer not be accepted. Should our offer be accepted, I/We further agree to deposit the required amount of Security Deposit for the work as provided for in the tender specification within the stipulated time as may be indicated by BHEL BHOPAL.

I/We further agree to execute all the works referred to in the said documents upon the terms and conditions contained or referred to therein and as detailed in the appendices annexed there to.

Signature of the Tenderer
Address

PLACE :
DATE :



ANNEXURE –B

CHECKLIST & SCHEDULE OF GENERAL PARTICULARS

NOTE : - Bidder shall fill in the following details and no column should be left blank.

1.	Name & Address of the Bidder		
2.	Fax / Email Address		
3.	Phone No. (Office)	OFFICE:-	MOB:-
4.	Name & designation of the official of the tenderer to whom all the references shall be made		
5.	Bidder's proposal No. & date		
6.	Whether Tender Fee submitted by EFT Please give details.		
7.	Whether EMD submitted by EFT / MSME certificate Pl. give details.		
8.	Validity of offer / rates quoted for 3 months from the offer date	Yes / No	
9.	PAN No. Photocopy enclosed	Yes / No (PAN NO. -----)	
10.	GSTIN Registration No. (If Applicable) photocopy enclosed		
11.	Financial viability in the format at Annexure “C”	Yes / No	
12.	Detail of experience in the format at Annexure “D”	Yes / No	
13.	Month wise Manpower Deployment Plan in the format at Annexure “E”	Yes / No	
14.	List of tools & tackles in the format at Annexure “F”	Yes / No	
15.	Attested copy of power of attorney	Yes / No	
16.	Details about type of the firm with relevant supporting document	Yes / No	
17.	Declaration sheet in the format at Annexure “G”	Yes / No	
18.	Whether signed copy of tender document submitted	Yes/NO	
19.	No Deviation Filled (Technical) as per Annexure “H”	Yes / No	
20.	No Deviation Filled (Commercial) as per Annexure “I”	Yes / No	
21.	Certificate conforming knowledge about site condition as per Annexure “J”	Yes / No	

SIGNATURE OF THE BIDDER WITH SEAL



External services hydro, BHEL Bhopal

ANNEXURE –C

FINANCIAL VIABILITY

1	Owner's capital in the business (in case of partnership, please mention percentage shares and amounts)		Rs.
2	Quantum of business done during the last Three financial years	2018-19	Rs.
		2017-18	Rs.
		2016-17	Rs.
3	Value of fixed assets of the businesses in last three financial years	2018-19	Rs.
		2017-18	Rs.
		2016-17	Rs.
4	Guarantee limits (if any) enjoyed by the firm		Rs.
5	Over draft limits (if any) enjoyed by the firm		Rs.
6	Please enclose audited profit and loss account and balance sheet for last 3 years (indicate no. of sheets) ending as on 31.03.19.	Yes	No

Note:-

1. All the above documents should be duly certified by auditors / Bank as may be applicable.

SIGNATURE OF THE BIDDER WITH SEAL



External services hydro, BHEL Bhopal

ANNEXURE – D

**INFORMATION OF SIMILAR JOBS EXECUTED / IN PROGRESS IN PAST TILL
30.09.2019)**

S.No.	Agency by whom awarded with name & contact no. of concerned person	Particulars of the works awarded	Work Order No. with Date	Work Order value	Date of completion

Note:- Refer Clause 1.1.9 of “Instructions to Tenderers”

SIGNATURE OF THE BIDDER WITH SEAL



External services hydro, BHEL Bhopal

ANNEXURE –E

MONTH WISE MANPOWER DEPLOYMENT PLAN TO BE SUBMITTED BY TENDERER

		Manpower Deployment indicating no. of persons							
		Months							
S/N	Category								
		1 st	2 nd	3 rd	4 th	5 th	6 th	7 th	REMARK
1	Project Manager								
2	F/Man./ Elect (Ex.PSPCL/BHEL)								
3	Supervisor								
4	Winder Having at least 5 year's experience for erection and commissioning of Generator								
5	Highly Skilled / Skilled Workers								
	a) Welder/brazer UT Certified								
	b) Electrician atleast 5 year's experience for erection and commissioning of Generator								
	c) Filter atleast 5 year's experience for erection and commissioning of Generator								
	d) Skilled Labour								
6	Unskilled workers								
7	Manpower of any other category required for the work								

SIGNATURE OF THE BIDDER WITH SEAL



External services hydro, BHEL Bhopal

ANNEXURE –F

LIST OF MAJOR TOOLS AND TACKLES

Sl. No.	Name of equipment	Quantity Owned	Quantity proposed to be deployed for this job

SIGNATURE OF THE BIDDER WITH SEAL



External services hydro, BHEL Bhopal

ANNEXURE –G

DECLARATION SHEET

I / We, (NAME OF THE FIRM)
..... hereby certify that, all the information and data furnished by me / us
with regard to this Tender Specification (NIT No.)
..... are true and complete to the best of my / our knowledge. I /
We have gone through the specification, conditions and stipulations in detail and agree to
comply with the requirements and intent of specification.

I / We, further certify that I / we am / are the duly authorised representative(s) of the under
mentioned tenderer and a valid power of attorney to this effect is also enclosed.

I / We, hereby declare that I / we shall treat the tender documents, drawings, specifications and
other records connected with the work as secret / confidential and shall not communicate
information / derived there from to any persons other than a person to whom I / We am / are
authorised to communicate the same or use the information in any manner prejudicial to the
safety of the same.

Tenderer's Name & Address:

SIGNATURE OF THE BIDDER WITH SEAL



ANNEXURE –H

CERTIFICATE OF NO-DEVIATION (TECHNICAL)

I/WE, M/s

.....

HEREBY CERTIFY THAT NOTWITHSTANDING ANY CONTRARY INDICATIONS/ CONDITIONS ELSEWHERE IN OUR OFFER DOCUMENTS, I/WE HAVE NEITHER SET ANY TERMS AND CONDITIONS NOR THERE IS ANY DEVIATION TAKEN FROM THE CONDITIONS OF BHEL'S TENDER SPECIFICATIONS- TECHNICAL OTHER THAN MENTIONED BELOW AND I/WE AGREE TO ALL OTHER TERMS AND CONDITIONS MENTIONED IN BHEL'S TENDER SPECIFICATION–TECHNICAL WITH ASSOCIATED AMENDMENTS AND CLARIFICATIONS:

Sr.No.	Tender Spec. Ref doc.	Clause Reference	Clause description as appearing in tender document	Deviation (If any)
1.0				
2.0				
3.0				
4.0				
5.0				
6.0				
7.0				

SIGNATURE OF THE BIDDER WITH SEAL



ANNEXURE –I

CERTIFICATE OF NO-DEVIATION (COMMERCIAL)

I/WE, M/s
.....

HEREBY CERTIFY THAT NOTWITHSTANDING ANY CONTRARY INDICATIONS/ CONDITIONS ELSEWHERE IN OUR OFFER DOCUMENTS, I/WE HAVE NEITHER SET ANY TERMS AND CONDITIONS NOR THERE IS ANY DEVIATION TAKEN FROM THE CONDITIONS OF BHEL'S TENDER SPECIFICATIONS-COMMERCIAL OTHER THAN WHAT ARE MENTIONED BELOW AND I/WE AGREE TO ALL OTHER TERMS AND CONDITIONS MENTIONED IN BHEL'S TENDER SPECIFICATION-COMMERCIAL WITH ASSOCIATED AMENDMENTS AND CLARIFICATIONS:

Sr.No.	Tender Spec. Ref doc.	Clause Reference	Clause description as appearing in tender document	Deviation(If any)
1.0				
2.0				
3.0				
4.0				
5.0				
6.0				
7.0				

SIGNATURE OF THE BIDDER WITH SEAL



External services hydro, BHEL Bhopal

ANNEXURE – J

**CERTIFICATE CONFORMING KNOWLEDGE
ABOUT SITES' CONDITION**

REFERENCE: NIT NO. ESH/MUKERIAN #2/T-01

We, M/s -----

Hereby declare and confirm that we have visited the project site at Machine No. 2 (15 MW) at Power House No. 1 of Mukerian Hydel Project Stage-I , Punjab as referred in BHEL's Tender Specification under reference above and acquired full knowledge and information about the sites conditions. We further confirm that the above information is true and correct and we shall not be eligible for any additional payment of any nature on account of lack of knowledge or non-familiarization of sites conditions.

SIGNATURE OF THE BIDDER WITH SEAL



ANNEXURE –K

CONFIRMATION OF PARTICIPATION IN REVERSE AUCTION

REFERENCE: NIT NO. ESH/MUKERIAN #2/T-01

We, M/s -----

Hereby declare and confirm that we possess the knowledge about the online process of reverse auction and if BHEL go for the reverse auction process for the finalization of L1 party, as referred in BHEL's Tender documents, we have no objection to participate in the reverse auction process.

GENERAL TERMS AND CONDITIONS OF REVERSE AUCTION

Against this tender enquiry for the subject work with detailed scope of work as per NIT conditions and specifications BHEL may resort to "REVERSE AUCTION PROCEDURE" i.e. ON LINE BIDDING ON INTERNET.

1. For the proposed reverse auction, technically and commercially acceptable bidders only shall be eligible to participate.
2. 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.
3. BHEL will inform the contractor in writing in case of reverse auction the details of service provider to enable them to contact and get trained.
4. Business rules like event date, time, start price, bid decrement, extensions etc. also will be communicated through service provider for compliance.
5. Contractors have to fax the Compliance form in the prescribed format (provided by Service provider) before start of reverse auction. Without this the contractor will not be eligible to participate in the event.
6. Reverse auction will be conducted on scheduled date & time.
7. At the end of Reverse Auction event, the lowest bidder value will be known on the network.
8. The lowest bidder has to fax the duly signed filled in prescribed format as provided on case to case basis to BHEL through service provider within 24 hours of Auction without fail.
9. Any variation between the on line bid value and the signed document will be considered as sabotaging the tender process and will invite disqualification of the contractor to conduct business with BHEL as per prevailing procedure.
10. **On successful completion of Reverse Auction proceedings, the L1 bidder shall be required to submit detailed billing break up with in 01 week by indicating unit rate against each and every item of the price schedule and the same shall be applicable with due approval from BHEL for processing payments.**
11. 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.

SIGNATURE OF THE BIDDER WITH SEAL



External services hydro, BHEL Bhopal

ANNEXURE –L

**CERTIFICATE OF CONFIRMATION OF NOT
BEING BLACK LISTED IN BHEL / PSPCL**

(The bidder has not been black listed / prohibited/ banned by any
BHEL unit / PSPCL as on date.)

We,

M/S

.....
... Hereby declare and confirm that we have done the business with BHEL (name of the
unit/ units).....and / or with PSPCL **in the past and** our
company / organization has not been black listed / banned / prohibited for doing the
business by any of the above two units / organizations as on date.

OR

We,

M/S

.....
... Hereby declare and confirm that we have not done any business with BHEL
.....(name of the unit/ units)/ or with PSPCL till date and we / our
company / organisation is for the first time applying for doing the business with them.

SIGNATURE OF THE BIDDER WITH SEAL



ANNEXURE –M

AGREEMENT

(To be executed on non-judicial stamp paper of appropriate value as per Government norms)

THIS AGREEMENT MADE THIS..... DAY OF 201.... Between BHARAT HEAVY ELECTRICALS LIMITED, Bhopal (A Government of India Enterprise) a Company incorporated under the Companies Act 1956, having its registered office at BHEL House, Siri Fort, New Delhi – 110 049 (hereinafter called BHEL) of the ONE PART

AND

..... (hereinafter called the 'Contractor') of the SECOND PART.

WHEREAS M/s state that they have acquired and possess extensive experience in the field of and whereas in response to an Invitation to Tender No..... dated issued by BHEL for the execution of the Contractor submitted their offer dated..... And whereas BHEL has accepted the offer of the Contractor on terms and conditions specified in the Letter of Intent No..... dated..... read with the reference cited therein.

THIS AGREEMENT WITNESSESS AND it is hereby agreed by and between the parties as follows:

That the Contractor shall execute the work of and more particularly described in Tender specification (hereinafter called the said works) in accordance with and subject to terms and conditions contained in these presents, Instructions to Tenderers, General Conditions of Contract, Special Conditions, annexures, Letter of Intent dated and such other instructions, drawings, specifications given to him from time to time by BHEL.

The Contractor is required to furnish to BHEL Security Deposit in the forms of cash/approved securities / Bank Guarantee valid upto for a sum of Rs..... (Rupees) towards satisfactory performance and completion of the Contract.

The Contractor has furnished a Guarantee bearing No..... Dated for a sum of Rs..... (Rupees.....) executed by Bank in favour of BHEL towards Security Deposit valid up to.....(The Contractor has furnished to BHEL an initial Security Deposit of Rs..... in cash /Approved Securities/BG for Rs..... And has agreed for recovery of the balance security deposit by BHEL..... @ 10% of the value of work done from each running bill till the entire security deposit is recovered).

The contractor hereby agrees to extend the validity of the Bank Guarantee for such further period or periods as may be required by BHEL and if the contractor fails to obtain such extension (s) from the Bank, the contractor shall pay forthwith or accept recovery of Rs..... from the bills in one instalment and the Contractor further agrees that failure to extend the validity of the Bank Guarantee or failure to pay the aforesaid amount in the manner specified above shall constitute



breach of contract. In addition to above. BHEL shall be entitled to take such action as deemed fit and proper for recovering the said sum of Rs.....

That in consideration of the payments to be made to the contractor by BHEL in accordance with this Agreement the Contractor hereby convenience and undertakes with BHEL that they shall execute, construct, complete the works in conformity, in all respects, with the terms and conditions specified in this Agreement and the documents governing the same.

That the Contractor shall be deemed to have carefully examined this Agreement and the documents governing the same and also to have satisfied himself as to the nature and character of the works to be executed by him.

That the Contractor shall carry out and complete the execution of the said works to the entire satisfaction of the Site-In-Charge or such other officer authorised by BHEL, within agreed time schedule, the time of completion being the essence of the Contract.

That BHEL shall, after proper scrutiny of the bills submitted by the Contractor, pay to him during the progress of the said works such sum as determined by BHEL in accordance with this Agreement.

That this Agreement shall be deemed to have come into force from the date on which the letter of intent has been issued to the Contractor.

That whenever under this contract or otherwise, any sum of money shall be recoverable from a payable by the Contractor, the same may be deducted in the manner as set out in the General Conditions of Contract or other conditions governing this Agreement.

That all charges on account of Octroi, Terminal and other Taxes including sales tax or other duties on material obtained for execution of the said works shall be borne and paid by the Contractor.

That BHEL shall be entitled to deduct from the Contractor's running bills or otherwise Income Tax under Section 194(C) of the Income Tax Act, 1961.

That BHEL shall be further entitled to recover from the running bills of the contractor or otherwise such sum as may be determined by BHEL from time to time in respect of consumables supplied by BHEL, hire charges for tools and plants issued (where applicable) and any other dues owed by the contractor.

That it is hereby agreed by and between the parties that non-exercise, forbearance or omission of any of the powers conferred on BHEL and/or any of its authorities will not in any manner constitute waiver of the conditions here to contained in these presents and the liability of the Contractor with respect to compensation payable to BHEL or Contractor's obligations shall remain unaffected.

It is clearly understood by the between the parties that in the event of any conflict between the Letter of Intent and other documents governing this Agreement, the provisions in the letter of intent shall prevail.

The following documents:-

- (a) Invitation to Tender No..... and the documents specified therein
- (b) Contractor's Offer No..... date.....
- (c) Letter of Intent No..... date
- (d)



shall also form part of & shall govern this Agreement.

IN WITNESS HEREOF, the parties hereto have respectively set their signature in the presence of:

(CONTRACTOR)
to be signed by a person holding a valid Power of Attorney

For and on behalf of BHEL, Bhopal

WITNESS: -

1.
2.



ANNEXURE –N

**MODEL FORM OF BANK GUARANTEE (FOR SECURITY DEPOSIT)
(To be issued in non-judicial stamp paper of appropriate value as per Government norms)**

In consideration of the Bharat Heavy Electricals Limited, having its registered Office at BHEL House, Siri Fort, New Delhi (hereinafter called BHEL), having agreed to exempt (hereinafter called “the said Contractor (s)”) from the demand, under the terms and conditions of the Agreement dated made between BHEL and for (hereinafter called “the said Agreement”) of Security (name of work) deposit for the due fulfilment by the said contractor(s) of the terms and conditions contained in the said Agreement, on production of a bank guarantee for Rs..... (Rupees Only) We at the
(indicate the name of the Bank)

(hereinafter referred to as “the bank”) request of contractor(s) do hereby undertake to pay to BHEL and amount not exceeding Rs..... against any loss or damage caused to or suffered or would be caused to or suffered by BHEL, by reason of any breach by the said contractor(s), of any of the terms or conditions contained in the said Agreement.

We, do hereby undertake to pay the amounts due and payable

(indicate the name of the Bank) under this guarantee without any demur, merely on a demand from BHEL, stating that the amount claimed is due by way of loss or damage caused to or would be caused to or suffered by BHEL by reason of breach by the said Contractor(s) of any of the terms or conditions contained in the said Agreement or by reason of the contractor(s)’s failure to perform the said Agreement. Any such demand made on the bank shall be conclusive as regards the amount due and payable by the Bank under this guarantee. However, our liability under this guarantee shall be restricted to an amount not exceeding Rs.....

We, undertake to pay to BHEL any money so demanded

(indicate the name of the Bank)
notwithstanding any dispute or disputes raised by the Contractor(s) / supplier(s) in any suit or proceeding pending before any court or Tribunal relating thereto, our liability under these presents being absolute and unequivocal.

The payment so made by us under this bond shall be a valid discharge of our liability for payment there under and the contractor(s) / supplier(s) shall have no claim against us for making such payment.

We further agree that the guarantee herein contained

(indicate the name of the Bank) shall remain in full force and effect during the period that would be taken for the performance of the said Agreement and that it shall continue to be enforceable till all the dues of BHEL under or by virtue of the said Agreement have been fully paid and its claims satisfied or discharged or till BHEL certifies that the terms and conditions of the said Agreement have been fully and properly carried out by the said Contractor(s) and accordingly discharges this guarantee. Unless a demand or claim under this guarantee is made on us in writing on or before we shall be discharged from all liability under this guarantee thereafter.



We further agree with BHEL that BHEL shall have the fullest

(indicate the name of the Bank) liberty without our consent and without affecting in any manner our obligations hereunder to vary any of the terms and conditions of the said agreement or to extend time of performance by the said contractor(s) from time to time or to postpone for any time or from time to time any of the powers exercisable by the BHEL against the said Contractor(s) and to forbear or enforce any of the terms and conditions relating to the said Agreement and we shall not be relieved from our liability by reason of any such variation, or extension being granted to the said Contractor(s) or for any forbearance, act or omission on the part of BHEL or any indulgence by BHEL to the said Contractor(s) or by any such matter or thing whatsoever which under the Law relating to sureties would, but for this provision, have effect of so relieving us. This guarantee will not be discharged due to the change in the constitution of the Bank or the Contractor(s) / Supplier(s).

We, lastly undertake not to revoke this guarantee during its

(indicate the name of the Bank) currency except with the previous consent of BHEL in writing.

Dated Day..... of 20

For

.....
(indicate the name of the Bank)

Witness :

1. -----

2 -----

Note : The above format is drawn upon the model form jointly evolved by the Reserve Bank of India, the Indian Banker's Association and the Ministry of Finance, Government of India as circulated by Indian Banker's Association, Bombay vide their letter No. LA/14-61/7808 dated 1/5/1980 as such no deviations are acceptable.

To be issued in appropriate valid non-judicial stamp paper prevalent in the state where the same is executed which is to be certified by the Notary Public or any other competent officer of that state.



ANNEXURE - O

PROCEDURE-2.3 FOR CONDUCT OF CONCILIATION PROCEEDINGS

1. The proceedings of Conciliation shall broadly be governed by Part-III of the Arbitration and Conciliation Act 1996 or any statutory modification thereof and as provided herein:
2. The party desirous of resorting to Conciliation shall send an invitation/notice in writing to the other party to conciliate specifying all points of Disputes with details of the amount claimed. The party concerned shall not raise any new issue thereafter. Parties shall also not claim any interest on claims/counterclaims from the date of notice invoking Conciliation till the conclusion of the Conciliation proceedings. If BHEL is to initiate Conciliation, then, the invitation to Conciliate shall be extended to the concerned Stakeholder in Format-30 hereto. Where the stakeholder is to initiate the Conciliation, the notice for initiation of Conciliation shall be sent in Format-31 hereto.
3. The party receiving the invitation/notice for Conciliation shall within 30 days of receipt of the notice of Conciliation intimate its consent for Conciliation along with its counter-claims, if any.
4. The Conciliation in a matter involving claim or counter-claim (whichever is higher) up to Rs 5 crores shall be carried out by sole Conciliator nominated by BHEL while in a matter involving claim or counter-claim (whichever is higher) of more than Rs 5 crores Conciliation shall be carried out by 3 Conciliators nominated by BHEL. The appointment of Conciliator(s) shall be completed and communicated by the concerned Department/Group of BHEL Unit/Division/Region/Business Group to the other party and the Conciliator(s) within 30 days from the date of acceptance of the invitation to conciliate by the concerned party in the Format-32. The details of the Claim, and counter-claim, if any, shall be intimated to the Conciliator(s) simultaneously in Format-29.
5. The Parties shall be represented by only their duly authorized in-house executives/officers and neither Party shall be represented by a Lawyer.
6. The first meeting of the IEC shall be convened by the IEC by sending appropriate communication/notice to both the parties as soon as possible but not later than 30 days from the date of his/their appointment. The hearings in the Conciliation proceeding shall ordinarily be concluded within two (2) months and, in exceptional cases where parties have expressed willingness to settle the matter or



there exists possibility of settlement in the matter, the proceedings may be extended by the IEC by a maximum of further 2 months with the consent of the Parties subject to cogent reasons being recorded in writing.

7. The IEC shall thereafter formulate recommendations for settlement of the Disputes supported by reasons at the earliest but in any case within 15 days from the date of conclusion of the last hearing. The recommendations so formulated along with the reasons shall be furnished by the IEC to both the Parties at the earliest but in any case within 1 month from the date of conclusion of the last hearing.

8. Response/modifications/suggestions of the Parties on the recommendations of the IEC are to be submitted to the IEC within time limit stipulated by the IEC but not more than 15 days from the date of receipt of the recommendations from the IEC. 9. In the event, upon consideration, further review of the recommendations is considered necessary, whether by BHEL or by the other Party, then, the matter can be remitted back to the IEC with request to reconsider the same in light of the issues projected by either/both the Parties and to submit its recommendations thereon within the following 15 days from the date of remitting of the case by either of the Parties. 10. Upon the recommendations by the Parties, with or without modifications, as considered necessary, the IEC shall be called upon to draw up the Draft

Settlement Agreement in terms of the recommendations. 11. When a consensus can be arrived at between the parties only in regard to any one or some of the issues referred for Conciliation the draft Settlement Agreement shall be accordingly formulated in regard to the said Issue(s), and the said Settlement Agreement, if signed, by the parties, shall be valid only for the said issues. As regards the balance issues not settled, the parties may seek to resolve them further as per terms and conditions provided in the contract. 12. In case no settlement can be reached between the parties, the IEC shall by a written declaration, pronounce that the Conciliation between the parties has failed and is accordingly terminated.

13. Unless the Conciliation proceedings are terminated in terms of para 22 (b), (c) & (d) herein below, the IEC shall forward his/its recommendations as to possible terms of settlement within one (1) month from the date of last hearing. The date of first hearing of Conciliation shall be the starting date for calculating the period of 2 months.

14. In case of 3 members IEC, 2 members of IEC present will constitute a valid quorum for IEC and meeting can take place to proceed in the matter after seeking consent from the member who is not available. If necessary,



videoconferencing may be arranged for facilitating participation of the members. However, the IEC recommendations will be signed by all members. Where there is more than one (1) Conciliator, as a general rule they shall act jointly. In the event of differences between the Members of IEC, the decision/recommendations of the majority of the Members of IEC shall prevail and be construed as the recommendation of the IEC.

15. The Draft Settlement Agreement prepared by the IEC in terms of the consensus arrived at during the Conciliation proceedings between the Parties shall be given by the IEC to both the parties for putting up for approval of their respective Competent Authority.

16. Authority viz. the Board Level Committee on Alternative Dispute Resolution s Competent Authority to the draft settlement agreement shall be obtained by the other party and informed to BHEL within 15 days of receipt of the final draft settlement agreement by it. Upon approval by the Competent Authority, the Settlement Agreement would thereafter be signed by the authorized representatives of both the Parties and authenticated by the members of the IEC.

17. In case the Draft Settlement Agreement is rejected by the Competent Authority of BHEL or the other Party, the Conciliation proceedings would stand terminated.

18. A Settlement Agreement shall contain a statement to the effect that each of the person(s) signing thereto (i) is fully authorized by the respective Party(ies) he/she represents, (ii) has fully understood the contents of the same and (iii) is signing on the same out of complete freewill and consent, without any pressure, undue influence.

19. The Settlement Agreement shall thereafter have the same legal status and effect as an arbitration award on agreed terms on the substance of the dispute rendered by an arbitral tribunal passed under section 30 of the Arbitration and Conciliation Act, 1996. 20. Acceptance of the Draft Settlement Agreement/recommendations of the Conciliator and/or signing of the Settlement Agreement by BHEL shall however, be subject to withdrawal/closure of any arbitral and/or judicial proceedings initiated by the concerned Party in regard to such settled issues.

21. Unless otherwise provided for in the agreement, contract or the Memorandum of Understanding, as the case may be, in the event of likelihood of prolonged absence of the Conciliator or any member of IEC, for any reason/incapacity, the Competent Authority/Head of Unit/Division/Region/Business Group of BHEL may substitute the Conciliator or such member at any stage of the proceedings. Upon appointment of the substitute Conciliator(s), such reconstituted IEC may, with the



consent of the Parties, proceed with further Conciliation into the matter either de-novo or from the stage already reached by the previous IEC before the substitution.

22. The proceedings of Conciliation under this Scheme may be terminated as follows:

- a. On the date of signing of the Settlement agreement by the Parties; or,
 - b. By a written declaration of the IEC, after consultation with the parties, to the effect that further efforts at conciliation are no longer justified, on the date of the declaration; or,
 - c. By a written declaration of the Parties addressed to the IEC to the effect that the Conciliation proceedings are terminated, on the date of the declaration;
- or,
- d. By a written declaration of a Party to the other Party and the IEC, if appointed, to the effect that the Conciliation proceedings are terminated, on the date of the declaration; or,
 - e. On rejection of the Draft Settlement Agreement by the Competent Authority of BHEL or the other Party.

23. The Conciliator(s) shall be entitled to following fees and facilities:

Sl No	Particulars	Amount
1	Sitting fees	Each Member shall be paid a Lump Sum fee of Rs 75,000/- for the whole case payable in terms of paragraph No. 27 herein below.
2	Towards drafting of settlement agreement	In cases involving claim and/or counter-claim of up to Rs 5crores. Rs 50,000/- (Sole Conciliator) In cases involving claim and/or counter-claim of exceeding Rs 5 crores but less than Rs 10 crores. Rs 75,000 (per Conciliator In cases involving claim and/or counter-claim of more than Rs 10 crores. Rs 1,00,000/- (per Conciliator) Note: The aforesaid fees for the drafting of the Settlement Agreement shall be paid on the, Signing of the Settlement Agreement after approval of the Competent Authority or Rejection of the proposed Settlement Agreement by the Competent Authority of BHEL.
3	Secretarial expenses	Rs 10,000/- (one time) for the whole case for Conciliation by a Sole Member IEC. Where Conciliation is by multi member Conciliators Rs 30,000/- (one time)- to be paid to the IEC



4	Travel and transportation and stay at outstation Retired Senior Officials of other Public Sector Undertakings (pay scale wise equivalent to or more than E-8 level of BHEL).	As per entitlement of the equivalent officer (pay scale wise) in BHEL.
	Others	As per the extant entitlement of whole time Functional Directors in BHEL. Ordinarily, the IEC Member(s) would be entitled to travel by air Economy Class
5	Venue for meeting	Unless otherwise agreed in the agreement, contract or the Memorandum of Understanding, as the case may be, the venue/seat of proceedings shall be the location of the concerned Unit / Division / Region / Business Group of BHEL. Without prejudice to the seat/venue of the Conciliation being at the location of concerned BHEL Unit / Division / Region / Business Group, the IEC after consulting the Parties may decide to hold the proceedings at any other place/venue to facilitate the proceedings. Unless, Parties agree to conduct Conciliation at BHEL premises, the venue is to be arranged by either Party alternately.

24. The parties will bear their own costs including cost of presenting their cases/evidence/witness(es)/expert(s) on their behalf. The parties agree to rely upon documentary evidence in support of their claims and not to bring any oral evidence in IEC proceedings.

25. If any witness(es) or expert(s) is/are, with the consent of the parties, called upon to appear at the instance of the IEC in connection with the matter, then, the costs towards such witness(es)/expert(s) shall be determined by the IEC with the consent of the Parties and the cost so determined shall be borne equally by the Parties. 26.

The other expenditures/costs in connection with the Conciliation proceedings

27. Out of the lump sum fees of Rs 75,000/- for Sitting Fees, 50% shall be payable after the first meeting of the IEC and the remaining 50% of the Sitting Fees shall be payable only after termination of the conciliation proceedings in terms of para 22 hereinabove. 28. The travelling, transportation and stay at outstation shall be arranged by concerned Unit as per entitlements as per Serial No. 4 of the Table at para 23 above, and in case such arrangements are not made by the BHEL Unit, the same shall be reimbursed to the IEC on actuals limited to their entitlement as per Serial No. 4 of the Table at Para 23 above against supporting documents.



The IEC Member(s) shall submit necessary invoice for claiming the fees/reimbursements.

29. The Parties shall keep confidential all matters relating to the conciliation proceedings. Confidentiality shall extend also to the settlement agreement, except where its disclosure is necessary for purposes of its implementation and enforcement or as required by or under a law or as per directions of a Court/Governmental authority/ regulatory body, as the case may be.

30. The Parties shall not rely upon or introduce as evidence in any further arbitral or judicial proceedings, whether or not such proceedings relate to the Disputes that is the subject of the Conciliation proceedings:

- a. Views expressed or suggestions made by the other party in respect of a possible settlement of the Disputes;
- b. admissions made by the other party in the course of the Conciliator proceedings;
- c. proposals made by the Conciliator;
- d. The fact that the other Party had indicated his willingness to accept a proposal for settlement made by the Conciliator.

31. The Parties shall not present the Conciliator(s) as witness in any Alternative Dispute Resolution or Judicial proceedings in respect of a Disputes that is/was the subject of that particular Conciliation proceeding.

32. None of the Conciliators shall act as an arbitrator or as a representative or counsel of a Party in any arbitral or judicial proceeding in respect of a Disputes that is/was the subject of that particular Conciliation proceeding.

33. The Parties shall not initiate, during the Conciliation proceedings, any arbitral or judicial proceedings in respect of a Disputes that is the subject matter of the Conciliation proceedings except that a Party may initiate arbitral or judicial proceedings where, in his opinion, such proceedings are necessary for preserving his rights including for preventing expiry of period of limitation. Unless terminated as per the provisions of this Scheme, the Conciliation proceedings shall continue notwithstanding the commencement of the arbitral or judicial proceedings and the arbitral or judicial proceedings shall be primarily for the purpose of preserving rights including preventing expiry of period of limitation.

34. The official language of Conciliation proceedings under this Scheme shall be English unless the Parties agree to some other language



ANNEXURE-P

LIST OF CONSORTIUM BANKS

1. SBI
2. SBH
3. Canara Bank
4. PNB
5. BOB
6. SBT
7. Deutsche Bank
8. Citi Bank
9. HDFC
10. HSBC
11. SCB
12. ICICI
13. ABN Amro Bank N.V.
14. Corporation Bank
15. Syndicate Bank
16. Indian Bank
17. UCO Bank
18. Central Bank
19. Oriental Bank of Commerce
20. Kotak Mahindra Bank Limited
21. The Federal Bank Limited
22. United Bank of India
23. Vijaya Bank
24. Union Bank of India
25. Bank of India
26. Punjab & Sind Bank
27. Andhra Bank
28. Axis Bank



ANNEXURE-Q

INDEMNITY BOND

(To be issued in Non-Judicial Stamp Paper of appropriate value as per Government norms)

WHEREAS THE (Name of the contractor) M/s. _____, having its registered office at, _____ has taken the contract for tender NO..... & Contractor's Offer No.....but the sub-contractors have also to obtain licence under the contract Labour (Regulation & Certificate under Form-V of the said rules.

So on the request of (Name of the contractor) M/s.....M/s Bharat Heavy Electricals Limited, Bhopal has agreed to issue certificate in Form-V in respect of the sub-contractor mentioned below. M/s, therefore, undertake to fully indemnify the M/s Bharat Heavy Electricals Limited, Bhopal from any financial implication whatsoever that may arise due to the grant of certificate in respect of sub-contractors of (name of the contractor in Form-V under contract Labour (Regulation & Abolition) Act. 1970 and its amendments.

- 1.
- 2.
- 3.

Contractor



ANNEXURE-R

FORMAT FOR (EFT) ELECTRONIC FUND TRANSFER

You are requested to submit the information as per details given below at the earliest to enable processing of e-payment :

1. Name of the Supplier (Max 60 char)
2. Account No (Max 17 char)
3. Name of the bank, branch, city (Max 60, 40 and 20 characters respectively)
4. Branch Code (Max 5 char)
5. MICR Code (Max 30 char)
6. IFSC Code (Max. 30 char) [Every NEFT enabled bank / branch has a unique IFSC Code (Indian Financial Security Code)] This code may differ from RTGS IFSC code.

VENDORS / BIDDERS ARE SUPPOSED TO SUBMIT THE INFORMATION ON FIRM'S LETTER HEAD DULY ENDORSED AND STAMPED BY THEIR BANKERS.

In addition to above information please also furnish the following details to enable faster clearance of bills.

7. E-Mail Address (Max 40 char)
8. Details of TIN No. (Max 11 char)



ANNEXURE –S

List of Testing Equipments , General Tools and tackles to be provided by contractor

Testing Equipments

1. Power pack and sufficient numbers of jacks for core pressing and hydraulic wrench for core tightening.
2. Operation & minor maintenance Kit, .
3. Micro Ohm meter for winding resistance measurement.
4. Phase Sequence tester.
5. Auto transformer, cables etc for Impedance measurement of rotor poles.
6. Voltage drop & polarity check testing equipments for field coils.

Sufficient quantity of general Tools and tackles (Required as per scope of work)

1. Set of D Spanner, ring spanner, box spanner (refer note)
2. Set of screw driver,
3. Set of Allen key (refer note)
4. Set of Hexa Blade
5. Set of Pipe wrench
6. Set of Slide Wrench
7. Set of Scraper
8. Set of Hammer
9. Set of Chisel
10. Set of Die & Tap
11. Set of Drilling machine
12. Set of Drill bits
13. Set of Mechanical Jack(as required)
14. Set of Hydraulic Jack(as required)
15. Surface plate
16. Set of Chain pulley block
17. Set of Grinder
18. Set of C Clamp
19. Set of cutting nozzle(welding)
20. Set of Nylon Hammer
21. Set of Nylon Sealing
22. Set of letter Punch
23. Set of Number Punch
24. Set of Hole Punch
25. Set of Plier
26. Set of file
27. Measuring Tape
28. Set of Dial Gauge
29. Measuring Scale
30. Height gauge
31. Set of Vernier calliper
32. Set of stick Micrometer
33. Set of inside and outside micrometer
34. Set of Measuring Scale, tape
35. Water level manometer.



- 36.Set of Painting Brush, airless spray gun, spray gun
- 37.Grit blasting/ shot blasting machine
- 38.Compressor for cleaning and spary painting
- 39.Glass Tape, Mica Tape, Cotton Tape for minor repair
- 40.Rustalene (as required)
- 41.Oil Stone (as required)
- 42.Set of Engg. Blue
- 43.Set of Teflon Tape
- 44.Set of Locktite
- 45.Holdtite (as required)
- 46.Brazing Torch(as required)
- 47.Cylinder Key
- 48.Drill Key (as required)
- 49.Set of Filler Gauge)
- 50.Set of Drill Bit
- 51.Set of Wire Brush
- 52.Gas cutting wire (as required)
- 53.Set of Gas Cutting Nozzle
- 54.Set of Cutting Disc
- 55.TIG Welding set
- 56.DC welding generator
- 57.Welding transformer
- 58.Set of Grinding Disc
- 59.Set of DP test kit
- 60.M Seal (as required)
- 61.500 V hand Meggar
- 62.KV motorised meggar
- 63.Set of Wire Silling
- 64.Set of nylon sling
- 65.Set of stud Rod
- 66.Set of Hand Lamp
- 67.Cloth (as required)
- 68.Cotton Waste (as required)
- 69.Set of Switch Board
- 70.Set of Halogen Lamp
- 71.Set of Copper Rod
- 72.Set of Copper Plate
- 73.Set of Drill Sleeve
- 74.Asbestos Cloth (as required)
- 75.Portable Oven (as required)
- 76.Straight Edge (as required)
- 77.Set of Goti
- 78.Set of O Ring
- 79.Set of Blower
- 80.Red Paint (as required)
- 81.Black Paint (as required)
- 82.Yellow Paint (as required)
- 83.Thinner / Kerosene (as required)
- 84.Set of Hammer Ring
- 85.Set of Eye Bolt
- 86.Molykote (as required)
- 87.Set of Shim Cutter
- 88.Set of Gouging Rod
- 89.Welding Lead and welding holder(as required)
- 90.Welding Electrodes Heating oven



- 91.M.S. & S.S. Electrodes (as required)
- 92.Cutting Electrode (as required)
- 93.Master Level
- 94.Set of Outside Micrometer
- 95.Inside Micrometer (as required)
- 96.Slip Gauge (as required)
- 97.Set of Allen Key
- 98.Right Angle (as required)
- 99.Set of Filler gauge
100. Set of Bur Cutter
101. All Welding Related Accessories
102. All Gas Cutting Accessories
103. All Grinding Accessories
104. Set of Scissor
105. Markin Cloth (as required)
106. Set of Depth Gauge
107. Set of Depth Gauge
108. Theodolite
109. Set of Torque Wrench (as required)
110. Hydraulic Testing Pump for Water (as required)
111. Hydraulic Testing Pump for Oil (as required)
112. Set of D-Sackle (as required)
113. Set of Turn Buckle (as required)
114. Sand Paper /Emric Cloth (as required)
115. Spirit Level (as required)
116. Wooden Plank / Slipers (as required)
117. Stop Watch
118. Knife
119. Solder Rim
120. Vacuum Cleaner
121. Wire Stripper
122. Wire Crimping Tool
123. Non-Contact Type Digital Techometer
124. Digital Multimeter
125. Phase Sequence Meter
126. Tong Tester
127. Set of Safety Halmet
128. Set of Welding Glass / Mask
129. Set of Leg Plier /Guard
130. Set of Hand Gloves Cotton / Leather
131. Set of Nose / Ear Mask
132. Set of Hand Sleeve
133. Set of Dangri / Apron
134. Set of Safety Shoes /Gum Boots
135. First Aid Box
136. Angle grinder
137. Straight grinder
138. Shim Cutting tool
139. Vacuum cleaner
140. 24V transformer for lighting with bulbs and bulb holder
141. Safety apron, goggle, boots & helmet for workers

NOTE: Contractor shall arrange spanners of 'D', ring and allen key set of both metric system as well as of British system fasteners as the project is very old and some of the fasteners may be of British system. Contractor should arrange spanners to fasten up to M56 sizes.



Annexure - T

Taxes:

1. Wherever bidders are required to supply services at project site Party has to submit GST registration no. of the State in which project site is located along with copy of registration certificate at the time of submission of Bid. In case the same is not available at the time of submission of bid, the contractor has to give an undertaking that the same will be arranged before award of work order.
2. HSN Code/SAC, rate of tax under GST and applicable GST (IGST, CGST/SGST/UTGST) and GSTIN shall be clearly mentioned by the Bidder.
3. GST portion of the **invoice shall be released only upon:-**
 - 2.2.1 All invoices raised by contractors/vendors must be GST compliant Tax invoices as per GST invoice rules.
 - 2.2.2 Contractor declaring such invoice in his GSTR-1 or any modified return as notified by government
 - 2.2.3 Receipt of goods/services and Tax Invoice by BHEL and
 - 2.2.4 Confirmation of payment of GST thereon by contractor on GSTN portal
 - 2.2.5 Alternatively, Contractor has to submit BG of appropriate value which shall be valid at least one month after the confirmation of date of payment of GST by contractor on GSTN portal and receipt of Tax invoice and receipt of services, whichever is later. Contractor has to give an undertaking in this regard.
 - 2.2.6 Contractor has to give an undertaking to BHEL that they have declared invoice in his return and paying GST within timeline prescribed for availing ITC by BHEL.

Payment to Contractor for GST portion will be released only after completion of above activity and on availment of ITC by BHEL.
4. In case GST credit is delayed/denied to BHEL due to **non/delayed receipt of services/goods and /or tax invoice** or expiry of the timeline prescribed in GST Law for availing such ITC, or any other reasons not attributable to BHEL, GST amount shall be recoverable from the contractor along with interest levied/ leviable on BHEL.

Reverse Charge under GST

- 5A. In respect of services, reverse charge liability shall arise at the earliest of date of payment to service provider or 60 days from the date of issue of invoice by service provider. Contractor has to submit bill for payment within 30days from the date of invoice. Any interest or penalty implications attributable to the contractor shall be recovered from them.
- 5B. Any GST liability arising on BHEL under reverse charge before actual receipt of goods and/or invoice thereof would be subject to recovery of interest leviable for the period between the date of such liability and actual date of eligibility of ITC based on receipt of goods, receipt of invoices and other condition specified in GST Law.

Liquidated Damage/Penalty

6. Liquidated damage (LD) or Penalty if chargeable from suppliers/contractors as per NIT, applicable GST will be charged in addition to the same.

Tax Deduction at source

7. TDS as per extent provisions of the GST Law shall be deducted from supplier/contractor bill.



NIT No.: ESH/MUKERIAN #2/T-01

Renewal & Replacement of Wound Stator , Replacement of Existing Rotor Poles with New Poles having F-class insulation and Capital Maintenance of Machine No. 2 (15 MW) at Power House No. 1 of Mukerian Hydrel Project Stage-I , Punjab

**PART-2:
PRICE BID**



Sub : Renewal & Replacement of Wound Stator , Replacement of Existing Rotor Poles with New Poles having F-class insulation and Capital Maintenance of Machine No. 2 (15 MW) at Power House No. 1 of Mukerian Hydel Project Stage-I , Punjab				
Page 01 of 10				
NIT No. ESH/MUKERIAN#2/T-01				
SUMMARY OF PRICE SCHEDULE				
S. No	Schedule	Description	Amount in %	Amount in Rs. in numbers excluding GST
1	A	Building of Wound Stator in Service Bay using stator frame, punchings , Windings , RTDs, Insulation items etc.	20.50%	
2	B	Dismantling of machine	17.00%	
3	C	Generator Rotor Assembly including pole assembly	6.00%	
4	D	Generator Auxiliary systems like HS Lub, Brake & Jack system, CO2 System etc.	8.00%	
5	E	Capital Maintenance related with Turbine and Underwater Parts like runner, Runner Chamber & DT, Guide Vane apparatus ,TGB Housing etc.	13.00%	
6	F	Testing & Commissioning	10.50%	
7	G	Boxing Up/ Re-assembly	15.00%	
8	H	Defect Liability	10.00%	
		TOTAL OF SERVICES (%)	100.00%	

Total amount in words = Rs.

only

SIGNATURE OF THE BIDDER WITH SEAL



Sub : Renewal & Replacement of Wound Stator , Replacement of Existing Rotor Poles with New Poles having F-class insulation and Capital Maintenance of Machine No. 2 (15 MW) at Power House No. 1 of Mukerian Hydel Project Stage-I , Punjab

Page 02 of 10

NIT No. ESH/MUKERIAN#2/T-01

SCHEDULE -A

BUILDING OF WOUND STATOR

S. No.	Description	Unit	Qty.	% of total value
A.1	CORE BUILDING			
1	Place suitably the frame in service bay where further assembly is feasible.	Set	1	0.50%
2	Initial preparation of stator frame for assy of core including sweep gauge.	Set	1	0.50%
3	Stator core building at site in new stator frame using new core punching and other components as per drawing. Intermittent pressing as per drawing.	Set	1	2.00%
4	Installation of RTD in the Core.	Set	1	0.50%
5	Fixing of all other core bolts, pressing plates, horse shoe plates, key bars etc.in the correct location and welding.	Set	1	1.50%
6	Core Consolidation, tightening and assistance in Core Flux Test at site, hot spot detection. Correction , if required.	Set	1	2.50%
A.2	WINDING OF STATOR			
1	Fixing of new Coils in the newly built stator core, testing and its brazing as per drawing at different stages.	Set	1	3.00%
2	Assembly of new insulation items and RTDs to complete the stator assembly.	Set	1	2.00%
3	Stator winding connection with Bus Rings, assy of insulation blocks, insulation of joints etc.	Set	1	2.00%
4	Assy of all other parts which are necessary for completion of wound stator and its functioning.	Set	1	2.00%
5	Dry out of stator before HV test and Synchronisation.	Set	1	2.00%
6	Measurement of IR /PI and AC HV test at various stages of stator building including final HV as per applicable standard/BHEL norms	Set	1	2.00%
	TOTAL			20.50%

SIGNATURE OF THE BIDDER WITH SEAL



External services hydro, BHEL Bhopal

Sub : Renewal & Replacement of Wound Stator , Replacement of Existing Rotor Poles with New Poles having F-class insulation and Capital Maintenance of Machine No. 2 (15 MW) at Power House No. 1 of Mukerian Hydel Project Stage-I , Punjab				
Page 03 of 10				
NIT No.ESH/MUKERIAN#2/T-01				
SCHEDULE - B				
DISMANTLING				
S. No.	Description	Unit	Qty.	% of total value
B.	Dismantling			
1	Draining and storage of oil from bearings, oil sump, pipe line, servomotors and runner.	LOT	1	0.50%
2	Checking and recording of stator form, rotor form, air gaps of all the TGB/GGB/PMG, runner blades gaps, relative elevation of bottom bracket sole plates as well as generator sole plates and setting there of before dismantling.	LOT	1	1.00%
3	Dismantlement of oil header, connected pipelines, servo tubes, PMG and exciter assemblies /casing followed by disconnection of all power & control cables with proper marking.Dismantling of GB retaining sleeve.	LOT	1	0.50%
4	Dismantling of all air & oil coolers.	LOT	1	0.50%
5	Dismantling of generator guide and thrust bearing, TGB, shaft gland seal, maintenance seal all associated accessories etc.	LOT	1	1.50%
6	Dismantling of Stator frame, core & winding ; listing, segregating and stacking them properly in the Service bay at MPH-I, Talwara. Packing them in boxes and assistance in loading & unloading at power house & at store. All precautions shall be taken to the extent possible during dismantlement of Stator frame so that dismantled stator frame may be used in another machine of similar rating & capacity.	LOT	1	4.00%
7	Dismantling of top, bottom brackets & all accessories of generator, rotor (decoupling and shifting in service bay) , rotor poles from rotor, Field coils from rotor poles, bearings, stator core & winding, segregating items of stator as reusable & scrap and stacking the core and winding material in service bay.	LOT	1	3.00%
8	Decoupling of TG coupling nuts/ bolts and holding the runner on holding device.	LOT	1	0.50%
9	Dismantling of servo tube removal of rotor and shifting of rotor in service bay.	LOT	1	0.50%
10	Cleaning, painting /varnishing and refurbishing of good and reusable items and their proper stacking at the site for use. . This also covers painting and varnishing during intermediate stages also.	LOT	1	0.50%
11	Recording of guide vane vertical/bedding and top/bottom clearances before dismantling.	LOT	1	0.50%
12	Dismantling of air valve, top cover pumps and accessories, sealing system, GV servo motors and connecting pipe lines, regulating ring assembly, guide vane link mechanism, bush housing etc. top cover, runner, GV apparatus including all bushes, guide vanes, CGL system, Dismantling & repair work of underwater parts as required etc.	LOT	1	4.00%
TOTAL				17.00%

SIGNATURE OF THE BIDDER WITH SEAL



External services hydro, BHEL Bhopal

Sub : Renewal & Replacement of Wound Stator , Replacement of Existing Rotor Poles with New Poles having F-class insulation and Capital Maintenance of Machine No. 2 (15 MW) at Power House No. 1 of Mukerian Hydel Project Stage-I , Punjab

Page 04 of 10

NIT No. ESH/MUKERIAN#2/T-01

SCHEDULE - C

ROTOR ASSEMBLY INCLUDING POLE ASSEMBLY

S. No.	Description	Unit	Qty.	% of total value
C.	ROTOR ASSEMBLY INCLUDING POLE ASSEMBLY			
1	Cleaning and Painting of Rotor rim and surrounding areas.	Set	1	1.00%
2	Magnetic axis checking, and marking and correction by modification in rotor pole stops , if required	Set	1	1.00%
3	Initial testing of new wound poles	Set	1	1.00%
4	Installation of new wound poles / new poles on Rotor rim considering optimum static balancing and using new pole keys and pole springs. Blue matching of pole keys	Set	1	1.00%
5	Rotor lead connection and pole to pole connection, by drilling, brazing / soldering as per the requirement.	Set	1	1.00%
6	Cutting of excess length of pole keys at site as per requirement.	Set	1	1.00%
	TOTAL	Set	1	6.00%

SIGNATURE OF THE BIDDER WITH SEAL



External services hydro, BHEL Bhopal

Sub : Renewal & Replacement of Wound Stator , Replacement of Existing Rotor Poles with New Poles having F-class insulation and Capital Maintenance of Machine No. 2 (15 MW) at Power House No. 1 of Mukerian Hydel Project Stage-I , Punjab				
Page 05 of 10				
NIT No. ESH/MUKERIAN#2/T-01				
SCHEDULE - D				
Generator Auxiliary systems like HS Lub, Brake & Jack system, CO2 System etc.				
S. No.	Description	Unit	Qty.	% of total value
D.1	Brake & Jack system			
1	Dismantling of Old Brake & Jack assy and Assembly of new brake/jack assembly with all accessories	Set	1	1.00%
D.2	HS Lub System			
2	Installation of HS lubricating system along with the modified thrust pads including rectification in Thrust Pad locking arrangement, if any, spring mattress etc.	Set	1	1.00%
D.3	Installation of New CO2 System			
1	Installation of CO2 cylinder bank for main discharge	Set	1	0.75%
2	Installation of CO2 cylinder bank for delayed discharge	Set	1	0.75%
3	Installation of wire mesh enclosure for items at Sl. A & B	Set	1	0.75%
4	Installation of Fire alarm control panel (Unit 1,2 & 3)	Set	3	0.75%
5	Installation of Heat & smoke detectors (Unit 1,2 & 3)	Set	3	0.75%
6	Electrical cabling for above Sl. No. D & E (Unit 1,2 & 3)	Set	3	0.75%
7	Installation of piping (32 & 25 NB) inside barrel for each unit up to CO2 bank through Generator floor. It included pipe fitting, fixing and other completing items.(Unit 1,2 & 3)	Set	3	0.75%
8	Electrical cabling inside barrel, to CO2 control panel and final termination in the Control Room for above mentioned items.(Unit 1,2 & 3)	Set	3	0.75%
	TOTAL	Set	As above	8.00%

SIGNATURE OF THE BIDDER WITH SEAL



External services hydro, BHEL Bhopal

Sub : Renewal & Replacement of Wound Stator , Replacement of Existing Rotor Poles with New Poles having F-class insulation and Capital Maintenance of Machine No. 2 (15 MW) at Power House No. 1 of Mukerian Hydel Project Stage-I , Punjab				
Page 06 of 10				
NIT No. ESH/MUKERIAN#2/T-01				
SCHEDULE - E				
TURBINE RELATED CAPITAL MAINTENANCE WORK				
S. No.	Description	Unit	Qty.	% of total value
E.1	RUNNER CHAMBER AND DT			
1	Inspection and measurement of runner chamber diameter.	Set	1	0.50%
2	Measurement of thickness of runner chamber assembly using Ultrasonic gauge to record the deficiencies.	Set	1	0.50%
3	Minor Repair of draft tube cone assembly, runner chamber, DT windows, pivot ring, stay ring, top cover and DT followed by surface preparation and Coating of Epoxy Zinc rich primer & Paint on DT cone and DT.	Set	1	1.00%
E.2	GUIDE VANE APPARATUS AND TGB HOUSING			
1	Rectification of Guide Vanes that include repair of feather, bedding, Shaft and trunion to the extent possible by welding, grinding and turning to meet the original/drawing dimensions.	Set	1	0.50%
2	Shifting of the guide vanes for repair and machining at Contractor's works or any other place (including Transportation, insurance and other charges).	Set	1	0.50%
3	Blasting as per recommended procedure on feather portion of Guide Vane to remove dirt followed by coating with Epoxy Zinc rich primer and Epoxy paint.	Set	1	0.50%
4	Measurement of the diameters of all pivot holes, bearing housings for deciding the outer diameters of all the three sets of guide vane bushes.	Set	1	0.50%
5	Rectification of pivot holes. Cleaning and repair of Bush housing including replacement of bushes and thrust washers and associated fasteners.	Set	1	0.50%
6	Assembly of top and middle bushes in the guide vane bush housings.	Set	1	0.50%
7	Cleaning of greasing paths of bush housing with compressed air.	Set	1	0.25%
8	Coating for epoxy zinc rich paint on outer surface of bush housing.	Set	1	0.50%
9	Repair of Pivot Ring liner surface and stay ring all around the periphery by welding & grinding followed by epoxy primer and paint.	Set	1	0.50%
10	Cleaning of regulating ring with rust cleaner. PU paint coating on link, levers & regulating ring to avoid rusting.	Set	1	0.50%
11	Replacement of bushes and other parts envisaged in the scope of supply.	Set	1	0.50%
12	Replacement of Horizontal and Vertical bronze segment.	Set	1	0.50%
13	Repair of top cover liner surface all around the periphery by welding & grinding.	Set	1	0.50%
14	Inspection of TGB housing and repair if required.	Set	1	0.25%
E.3	RUNNER			
1	Complete overhauling of existing runner, oil header system, runner feedback system, identification of damages on the blades of runner for locating any internal and external defects, the rectification of the damaged portion of runner blades by way of welding, grinding and machining to the extent possible to build up the original profile.	Set	1	0.50%
2	Checking and maintaining the Runner's original Profile: if required then the blades shall be brought to Bhopal works for profile checking at Turbine shop.	Set	1	0.50%
3	The hydraulic and functional Test of existing runner assembly after overhauling in the service bay.	Set	1	0.50%
4	Activities like Chipping on Runner Cone, filling of cavities over runner body followed by coating oil resistance paint from inside and Epoxy Zinc rich primer and paint from outside is covered under the scope.	Set	1	0.50%
E.4	SERVOMOTORS AND AIR VALVE			
1	Dismantling of both the guide vane servomotors, carrying out a thorough cleaning of all the components, assembly of these servomotors with replacement of up seals and rubber cords, piston rings, fasteners etc.	Set	1	0.50%
2	Inspection of liner of servomotors and repair on the damaged areas, if any. However, in case of heavy damage.	Set	1	0.50%
3	Pressure testing of servomotors.	Set	1	0.50%
4	Replacement of air valve.	Set	1	0.50%
E.5	OIL HEADER			
1	Overhauling of oil header including replacement of gaskets, rubber cords/seals and other parts. Repair of oil header cap of unit by depositing material and machining. (Repair to be carried out at works)	Set	1	0.50%
		Set	1	13.00%

SIGNATURE OF THE BIDDER WITH SEAL



External services hydro, BHEL Bhopal

Sub : Renewal & Replacement of Wound Stator , Replacement of Existing Rotor Poles with New Poles having F-class insulation and Capital Maintenance of Machine No. 2 (15 MW) at Power House No. 1 of Mukerian Hydel Project Stage-I , Punjab				
Page 07 of 10				
NIT No. ESH/MUKERIAN#2/T-01				
SCHEDULE - F				
TESTING & COMMISSIONING ACTIVITY				
S. No.	Description	Unit	Qty.	% of total value
F.	TESTING AND COMMISSIONING			
1	Testing, calibration of new RTDs, DTTs etc before installation.	Set	1	0.50%
2	Measurement of DC resistance of stator winding and Rotor winding.	Set	1	0.25%
3	Assisting in Tan-delta and Capacitance test on complete stator winding	Set	1	0.50%
4	Measurement and setting of bearing clearances	Set	1	0.50%
5	Conducting Impedance test of individual poles.	Set	1	0.50%
6	Conducting Impedance test on complete rotor.	Set	1	0.50%
7	IR and HV tests on wound poles and Rotor	Set	1	0.50%
8	Stator form / Rotor form, Air Gap, Magnetic axis checking and correction if required,	Set	1	0.50%
9	Stator shifting and re-dowelling, if required	Set	1	1.00%
10	Leveling, Alignment, Centering checking and its correction , if required	Set	1	1.00%
11	Overall cleaning retightening of loose components of the machine.	Set	1	0.25%
12	Assisting in Testing of CO2 system	Set	1	0.25%
13	Assisting in Pre commissioning test and final running.	Set	1	0.50%
14	Assisting in OCC test on complete generator.	Set	1	0.50%
15	Assisting in SCC test on complete generator.	Set	1	0.50%
16	Assisting in Full load heat run and temperature rise test of complete generator.	Set	1	0.50%
17	Final cleaning, touch ups and tightenings where ever required.	Set	1	0.50%
18	Testing of runner.	Set	1	1.00%
19	Measurement of vibrations in all modes of operation and dynamic balancing of the unit if required.	Set	1	0.50%
20	Assisting in Handing over the complete unit to the customer after PG test and after 72 hrs of trial run	Set	1	0.25%
TOTAL		Set	1	10.50%

SIGNATURE OF THE BIDDER WITH SEAL



External services hydro, BHEL Bhopal

Sub : Renewal & Replacement of Wound Stator , Replacement of Existing Rotor Poles with New Poles having F-class insulation and Capital Maintenance of Machine No. 2 (15 MW) at Power House No. 1 of Mukerian Hydel Project Stage-I , Punjab				
Page 08 of 10				
NIT No. ESH/MUKERIAN#2/T-01				
SCHEDULE - G				
BOXING UP				
S. No.	Description	Unit	Qty.	% of total value
G.	BOXING UP			
1	Cleaning,hydro testing and installation of air and oil coolers	Set	1	0.50%
2	Installation of all RTD/DTTs -(a) Bearing RTD s& DTTs (b) stator hot air/cold air at respective locations (c) connections of RTDs /DTTs in the temperature recorders and respective panel. Commissioning of Temperature Recorder.	Set	1	0.50%
3	General servicing/overhauling / repair of any item requiring repairing.	Set	1	0.25%
4	Inspection of Thrust pads/Guide pads and Polishing of the same, if required.	Set	1	0.50%
5	DP Testing of thrust and guide pads.	Set	1	0.50%
6	Polishing of Journals, if required.	Set	1	0.50%
7	Checking & tightening of bolts & dowels of Lower bracket, if required.	Set	1	0.50%
8	Checking /rectification of fixing arrangement of brake track and polishing of the same.	Set	1	0.25%
9	Arresting leakage of oil / water, if any.	Set	1	0.50%
10	Final Painting of stator / Rotor/ machine.	Set	1	0.50%
11	Lowering of guide vanes, top cover and turbine shaft assembly along with runner.	Set	1	0.50%
12	Tightening of outer cover with new fasteners.	Set	1	0.50%
13	Assembly of guide vane bush housings, link levers, link mechanism etc, regulating ring, assembly of GV servomotors and connecting pipelines.	Set	1	0.50%
14	Installation of Centralized greasing system including panel, Dozer, feeders etc.	Set	1	0.50%
15	Adjustment of GV vertical and top/bottom clearance as per design.	Set	1	0.50%
16	Assembly of Air valve and connecting pipe lines etc.	Set	1	0.50%
17	Lowering of lower bracket.	Set	1	0.50%
18	Lowering of generator rotor assembly, upper bracket assembly.	Set	1	0.50%
19	Preparation of bearings for leveling and alignment.	Set	1	0.50%
20	Assembly of exciter, PMG, Oil header etc.	Set	1	0.50%
21	Coupling of generator shaft and turbine shaft assemblies.	Set	1	0.50%
22	Assembly of shaft sleeves of turbine and generator shaft. Replacement of GB retaining sleeve.	Set	1	0.50%
23	Assembly of TGB & GGB and setting of clearances.	Set	1	0.50%
24	Rebabbit TGB shell is to be installed.	Set	1	0.50%
25	Assembly of shaft sealing system.	Set	1	0.50%
26	Reaming/dowelling/re-dowelling at various points.	Set	1	0.50%
27	Setting of alpha-beta relationship.	Set	1	0.50%
28	Runner fixing and associated work	Set	1	0.50%
29	Dismantling of DT plate form, closing of DT and spiral case windows. Complete box up of the unit.	Set	1	0.50%
	Total	Set	1	14.00%

SIGNATURE OF THE BIDDER WITH SEAL



External services hydro, BHEL Bhopal

Sub : Renewal & Replacement of Wound Stator , Replacement of Existing Rotor Poles with New Poles having F-class insulation and Capital Maintenance of Machine No. 2 (15 MW) at Power House No. 1 of Mukerian Hydel Project Stage-I , Punjab				
Page 09 of 10				
NIT No. ESH/MUKERIAN#2/T-01				
SCHEDULE - H				
DEFECT LIABILITY.				
S. No.	Description	Unit	Qty.	% of total value
	Defect Liability			
1	Defect Liability	Set	1	10.00%
	TOTAL	Set	1	10.00%

To be released after the defect liability/ gaurantee period is over.

SIGNATURE OF THE BIDDER WITH SEAL

Sub : Renewal & Replacement of Wound Stator , Replacement of Existing Rotor Poles with New Poles having F-class insulation and Capital Maintenance of Machine No. 2 (15 MW) at Power House No. 1 of Mukerian Hydel Project Stage-I , Punjab	
Page 10 of 10	
NIT NO - ESH/MUK-10/T-01/ SEC - IV	
ILLUSTRATION FOR ARRIVING RATE OF A PARTICULAR ITEM	
S. No	Activity / Method
1	Suppose we want to calculate unit rate of activity 2 of Price Schedule B
2	Let the price quoted by the bidder for complete package under summary of Prices is Rs. 100 .
3	As per summary of Prices the weightage of Price Schedule B is 17 %
4	Hence the value of Price schedule B is Rs. 17.
5	As per Price Scedule B the weightage of activity 2 is 1 % of total services
6	Hence the total value of activity 2 of Price Schedule B will be Rs. 1.00.
7	Units rate shall be arrived at considering the total value assigned against each activity divided by the respective quantity

