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TENDER SPECIFICATION

TENDER NO. BHEL:NR(SCT): ALLAIN DUHANGAN :STORE:350

FOR

CONSTRUCTION OF STORE AT 2X96 MW ALLAIN DUHANGAN HEP AT
VILLAGE PHIRNI NEAR MANALI TOWN, DISTT KULLU, HIMACHAL
PRADESH.

PART I – TECHNICAL BID



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



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

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

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

THIS TENDER SPECIFICATION ISSUED TO:

M/S-----

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TENDER NOTICE

Sealed tenders are invited from the contractors fulfilling qualifying requirements for the “CONSTRUCTION OF STORE AT 2X96 MW ALLAIN DUHANGAN HEP AT VILLAGE PHIRNI NEAR MANALI TOWN, DISTT KULLU, HIMACHAL PRADESH.”

TENDER NO. BHEL:NR(SCT): ALLAIN DUHANGAN :STORE:350

QUALIFYING REQUIREMENTS:

“ Tenderer who wish to participate should have carried out / carrying out similar work during the last five years and also should have annual financial turnover of minimum of Rupees 20 lacs during any of the last three years (2002-03, 03-04 and 04-05).”

NOTES:

- (i) The Tender Documents comprise of following;
 - (a) General Conditions of Contract
 - (b) Special Conditions of Contract, Tender Notice, Project Synopsis etc.
 - (c) Rate Schedule
- (ii) Tender Documents with complete details are hosted in this web page. Bidder(s) intending to participate may download the tender document from the web site. Bidder(s) downloading the tender documents from the web site, shall remit Rs.1000/- (Rupees One thousand only) in the form of crossed demand draft (non-refundable), in favour of BHEL, NOIDA along with their offer
- (iii) Bidder(s) can also purchase hard copy of tender documents from this office. Tender documents (non transferable) will be issued on all working days between 09.30 Hrs. to 12.30 Hrs within the sale period i.e **upto 14.08.2006** on payment of Rs.1,000/- (non-refundable) either in cash or by crossed demand draft in favour of BHEL, NOIDA. Request for issue of tender document should clearly indicate Tender No. and work.

- (iii) Tenders must be submitted to the undersigned **latest by 14.08.2006** before opening of technical bids commences. Technical bids shall **be opened at 12.30 Hrs. on 14.08.2006.**
- (iv) Earnest Money Deposit (EMD) : Refundable, Non-interest bearing **EMD of Rs 25,000/-** shall be deposited by Account Payee Pay Order 'OR' Demand Draft in favour of " Bharat Heavy Electricals Limited" payable at Delhi/NOIDA . Those bidders who have already deposited ' One Time 'EMD' of Rs. 2,00,000/- with BHEL, PSNR, NOIDA need not submit EMD with the present tender.
- (v) Tenders not accompanied with Full Earnest Money Deposit, as indicated above, will not be considered.
- (vi) All corrigenda, addenda, amendments and clarifications to this Tender will be hosted in this web page and not in the newspaper. Bidders shall keep themselves updated with all such amendments.
- (vii) BHEL reserves the right to accept or reject any or all tenders without assigning any reason whatsoever.
- (viii) BHEL takes no responsibility for any delay/loss of documents or correspondences sent by courier/post.
- (ix) Purchase Preference will be given to CPSUs as per Govt. Guidelines.

AGM/SCP



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DOMESTIC NOTICE INVITING TENDER

LAST DATE OF SALE : 14.08.2006
DATE OF OPENING : 14.08.2006

NIT NO. / NAME OF WORK
<p>TENDER NO. BHEL:NR(SCT): ALLAIN DUHANGAN :STORE:350</p> <p>Sealed tenders are invited from the contractors fulfilling qualifying requirements for the “CONSTRUCTION OF STORE AT 2X96 MW ALLAIN DUHANGAN HEP AT VILLAGE PHIRNI NEAR MANALI TOWN, DISTT KULLU, HIMACHAL PRADESH.”</p>

NOTES

1. Purchase Preference will be given to CPSU as per Govt. Guidelines.
2. Please visit our website at www.bhel.com for details of NIT including Qualifying Requirements.
3. Earnest Money Deposit (EMD): Refundable, Non-interest bearing **EMD of Rs25,000/-** shall be deposited by Account Payee Pay Order 'OR' Demand Draft in favour of “ Bharat Heavy Electricals Limited” payable at Delhi/NOIDA . Those bidders who have already deposited ‘ One Time 'EMD' of Rs. 2,00,000/- with BHEL, PSNR, NOIDA need not submit EMD with the present tender.

AGM/SCP

Project Synopsis

2 X 96 MW ALLAIN DUHANGAN HYDRO POWER PROJECT

M/S AD Power Corporation (ADPC) has awarded a contract to BHEL for supply, transportation, storage and material handling at site, erection and commissioning of 2 x 96 MW Pelton turbines, generators, along with auxiliaries on a lump sum basis.

On the part of BHEL it has to create its own storage, residential and office facility at site. ADPC has to give leveled and compacted land and BHEL shall have to develop it for construction of Office/ Stores complex.

Allain Duhangan Hydro Electric Power Project is an underground Power House on streams Allain and Duhangan and is situated at Prini near Manali Town in Kullu District of Himachal Pradesh and is located about 310 Kms from Chandigarh and is about 60 Kms from Bhunter airport.

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PROCEDURE FOR SUBMISSION OF SEALED TENDERS:

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

TECHNICAL BID (COVER-I)

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

PRICE BID (COVER-II)

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

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

SECTION - III**SPECIAL CONDITIONS OF CONTRACT**

Clause No.	Title
34.0	Scope of Work
35.0	Instructions to Tenderers
36.0	Contractor's Supervision
37.0	Supervisory Staff & workmen
38.0	Tools & Plants / IMTEs
39.0	Material
40.0	Execution of the work
41.0	Methods of measurement
42.0	Deviation
43.0	Valuation of deviations
44.0	Compliance to regulation & byelaws
45.0	Facilities to be provided by BHEL/ Contractor
46.0	Progress reporting
47.0	Drawing & documents
48.0	Delay & Extension of Time
49.0	Price Variation
50.0	Income tax, Service Tax, Works Tax & Sales Tax
51.0	Time Schedule
52.0	Terms of payment
53.0	Insurance
54.0	Rate schedule cum BOQ/ Variation
55.0	Final Bill
56.0	Liquidated Damages
57.0	Security Deposit
58.0	Others

SECTION-III

SPECIAL CONDITIONS OF CONTRACT

34.0 SCOPE OF WORK

34.1 The tender Specifications cover all works for dismantling and transportation of existing store cum office complex at Largi HEP and construction of BHEL store cum office complex using mostly dismantled materials and some new materials as detailed in BOQ and Technical specifications at site for ALLAIN DUHANGAN HEP at village Phirni near Manali town in Distt Kullu in Himachal Pradesh State. The office is to be constructed on premises/land allotted by ADHPL. Details are as per technical specifications enclosed vide Annexure III and Plantation of new Trees & Plants at office site as instructed by Engineer-in-charge.

The Contractor is required to cut / relocate some of the existing plants / trees and to implant and maintain at least **25 new plants / trees and land scapping with flowers** etc. of approximately 100 Sq. M of assorted type at BHEL office or around within first month of the contract and maintain it till the tenure of the contract. No separate payment will be made for this work.

34.2 The work under this contract shall be carried out as per specifications, special conditions of contract, technical specifications, rate schedule, drawings etc., In case specifications are found to be incomplete, CPWD specifications shall be followed as per BHEL Site Engineer's instructions and approval.

34.3 **If there is any extra work, over and above the scope specified, it shall be carried out as per the prevailing CPWD rate schedule and applicable price indexation..**

34.4 Furnishing all labour, materials, supervision, construction plans, equipment, supplies, transport, to and from the site, fuel, electricity, compressed air, water and all other incidental items and temporary works not shown on specified but reasonably implied or necessary for the proper completion, maintenance and handling over the works, except in accordance with the stipulations laid down in the contract documents and additional stipulations as may be provided by the engineer during the course of works.

34.5 Furnishing test reports for the products used or intended to be used, shall be submitted if so desired by the engineer.

34.6 Carrying out topographic survey of the entire area of the stores land and establish levels and coordinates at suitable intervals, setting out the locations and levels of proposed structures, constructions and marking of reference pillars and other

identification works etc., The contractor shall provide the owner/BHEL such a assistance, instruments, machines, labour and materials as are normally required for examining, measuring and testing any work and the quality, weight or quantity of any material used.

- 34.7 The contractor under this contract shall also provide free of cost services of skilled persons for a total period of 6 Man-months exclusively for use by BHEL. This manpower will be required for following services;

“Skilled workers for working in store, office and colony. (3 man months)

Unskilled workers for working in store, office and colony. (3 man months)”

Persons so deployed shall have to work in extended hours whenever required. Workmen provided as per the above provisions shall be fully trained and experienced in the nature of work for which they are deployed.

In case contractor fails to provide above mentioned manpower as desired by BHEL, the latter shall have the right to hire such services from other agencies at the risk and cost of the contractor. However, if BHEL does not utilize the manmonths as per above provision , fully or partly, recovery at the rate of the prevailing minimum wages at Site for the categories given plus 10% will be made from the final bill of the contractor.

35.0 INSTRUCTIONS TO TENDERERS

- 35.1 Offers received without data/ information required to be submitted under tender clauses-11.1 to 11.11 are liable to be rejected. Documentary evidences should duly support all these data/ information.

- 35.2 No deviations to the tender conditions will normally be accepted.

- 35.3 The tenderers are advised to actually visit both the sites and fully acquaint themselves with site conditions, location of stores, transportation routes, Local taxes, toll charges and levies, local labour minimum wages & prevailing wage agreements at site, quantum of work etc. before quoting their rates for this work. BHEL shall not be responsible in any way for non-familiarisation of site conditions. Once the tenderer has quoted for the work, it is implied that he has ascertained various site condition and NO CLAIM whatsoever will be entertained by BHEL on any such account.**

- 35.4 BHEL are executing the 3 x 42 MW E&M package at Largi HEP and are maintaining their site office at the following address;**

**Construction Manager
BHEL site office
Largi Hydro Power project.**

**Saulikhad, Kulu Manali Highway
Mandi 175001 HP
Phone 01905-228109**

The tenderers are required to get in touch with Construction Manager at our site mentioned above in case any clarifications are required.

- 35.5 The contractor in the event of this work awarded to him, shall establish a site office at site and keep posted an authorised responsible officer who should hold a valid power of attorney for the purpose of the contract. Any order or instruction of the Engineer or his duly authorised representative shall be communicated to the contractor's representative at site office and the same will be deemed to have been communicated to the contractor at his legal address.

36.0 CONTRACTOR'S SUPERVISION

- 36.1 The Contractor shall himself supervise the execution of the Contract and shall appoint a competent Engineer / expert approved by BHEL Engineer to act in his place.
- 36.2 The Contractor shall employ an Engineer having at least one engineer/supervisor having at least a 'Diploma in Civil Engineering' from a recognized college, having experience for carrying out any work with a contract value exceeding Rupees Rs.Twenty lacs.
- 36.3 The employment of an Engineer as aforesaid shall not be necessary if the Contractor himself is in possession of a recognized technical qualification and is in the opinion of the Engineer capable of receiving instructions of the Engineer and of executing the work to the satisfaction of the Engineer.
- 36.4 If the Contractor fails to appoint a suitable Engineer as aforesaid, the Engineer shall have full powers to suspend the execution of work and stop payment of any money that may have become due until such date as a suitable Engineer is appointed and the Contractor shall be held responsible for the delay caused to the work and no extension of time on this account shall be given to him.
- 36.5 Orders given to the Contractor's Engineer shall be considered to have the same force as if they had been given to the Contractor himself.
- 36.6 The Contractor representative shall be in attendance at the site during all working hours and shall superintend the execution of work with such additional assistance in each grade, as the Engineer may consider necessary.
- 36.7 The Contractor or his accredited representative shall attend, when required and without making any claim for doing so, either the office of the Engineer or the work site to receive instructions.
- 36.8 The Engineer shall have full powers, and without assigning any reason, to require the Contractor immediately to cease to employ in connection with this contract any

Agent, servant or employee whose continued employment is, in his opinion, undesirable.

37.0 SUPERVISORY STAFF AND WORKMEN

- 37.1 The contractor shall deploy all the experienced skilled, semiskilled and unskilled workmen required for all the works under this specification. BHEL reserves the right to decide on the suitability of the workers and other personnel who will be deployed by the contractor. BHEL reserves the right to insist on removal of any employee of the contractor at any time, if they find him unsuitable and the contractor shall forth with removes him.
- 37.2 The supervisory staff including qualified Engineers deployed by the contractor shall ensure proper out-turn of work and discipline on the part of the labour put on the job by the contractor and in general see that the works are carried out in a safe and proper manner and in coordination with other labour and staff deployed directly by BHEL or other contractors of BHEL / BHEL's Client / other agency.
- 37.3 The work shall be executed under the usual conditions like rain, insufficient space, improper approach roads etc., and effecting major construction work and in conjunction with numerous other operations at site. The contractor and his personnel shall cooperate with other personnel / contractor, coordinating his work with others and proceed in a manner that shall not delay or hinder the progress of work as a whole.
- 37.4 The contractor's supervisory staff shall execute the work in the most substantial and workman like manner in the stipulated time. Accuracy of work and aesthetic finish are essential part of this contract. The contractor shall be responsible to ensure that assembly and workmanship conform to the dimensions and tolerances given in the drawings / documents / instructions given by BHEL Engineer from time to time.
- 37.5 It is the responsibility of the contractor to engage his workmen in round the clock shifts or on overtime basis for achieving the targets set by BHEL. The contractor's finally accepted rates shall include all these contingencies. The contractor shall deploy the necessary number of qualified and approved fulltime electrician at his cost to maintain the temporary electrical installations and other related areas.
- 37.6 During the course of construction, if the progress is found unsatisfactory, or in the opinion of BHEL, if it is found that the skilled workmen like masons, carpenter, bar binder, welder, piling rig operators, fitters, technicians etc. deployed are not sufficient, BHEL after giving reasonable opportunity to the contractor, will induct on the work the required workmen in addition to contractor's workmen to improve the progress and all charges incurred for engaging the additional workmen as per requirement with overheads shall be recovered from the contractor's running bills.
- 37.7 If the contractor or his workmen or employees shall break, deface, injure or destroy any part of a building, road kerb, fence, enclosure, water pipes, cables, drains, electric or telephone posts or wire, trees or any other property or to any part of erected components etc., the contractor shall make the same good at his own

expense or in default, BHEL may cause the same to be made good by other workmen or by other means and deduct the expenses (of which BHEL's decision will be final) from any money due to the contractor.

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

38.0 TOOLS AND PLANTS / IMTEs

- 38.1 All the T&P / IMTES, which are required for successful and timely completion of work covered under these specifications shall be arranged and provided by the contractor at his own cost in working condition (**Indicative list As per Annexure I & II**). Contractor shall make his own arrangement for maintenance of all the tools and plants, having adequate stock of spares and consumables to minimize the down time.
- 38.2 In the event of the failure of contractor to bring necessary and sufficient T&Ps/ and IMTEs, BHEL will be at liberty to arrange the same at the risk and cost of contractor including transportation cost of same from any of BHEL site/place and hire charges as applicable shall be deducted from contractor's bill. Decision of BHEL in this regard shall be final and binding on contractor.
- 38.3 All distribution boards, connecting cables / welding cables, wire ropes, hoses etc. including temporary air/water / electrical connections etc. shall have to be arranged by the contractor at his own cost.
- 38.4 All supervision and labour required for maintenance and the contractor at his own cost shall arrange attending breakdowns.
- 38.5 Contractor shall ensure deployment of serviced and healthy T&Ps including cranes, lifting tackles, wire ropes, Manila ropes, winches and slings, road rollers, bull dozers/JCB etc. History card and maintenance records for major T&Ps will be maintained by the contractor and will be made available to BHEL Engineer for inspection as and when required. Identification for such T&Ps will be done as per BHEL Engineer's advice.
- 38.6 Contractor shall ensure deployment of reliable and calibrated IMTEs (Inspection measuring and Test equipment). The IMTEs shall have test/ calibration certificates from authorized / Govt. approved / accredited agencies traceable to National / International standards. Each IMTE shall have a label indicating calibration status i.e. date of calibration, calibration agency and due date for calibration. A list of such instruments deployed by contractor at site with its calibration status is to be submitted to BHEL Engineer for control.

- 38.7 Retesting / re-calibration shall also be arranged at regular intervals during the period of use as advised by BHEL Engineer with in the contract price. The contractor will also have alternate arrangements for such IMTE so that work does not suffer when the particular instrument is sent for calibration. Also if any IMTEs not found fit for use, BHEL shall have the right to stop the use of such item and instruct the contractor to deploy proper item and recall i.e. repeat the readings taken by that instrument, failing which BHEL may deploy IMTEs and retake the readings at contractor's cost.
- 38.8 BHEL shall have lien on all T&Ps, IMTEs & other equipment of the Contractor brought to the site for the purpose of construction of stores. BHEL shall continue to hold the lien on all such items throughout the period of contract. The Contractor and/or his Sub-contractors shall remove no material brought to the Site from the Site without the prior written approval of the Engineer.
- 38.9 The month wise T&P deployment plan to be submitted as per format (**at Annexure-D to general conditions of contract**) is only to assess the capability as well as understanding of the contractor to execute the work. It shall be the contractor's responsibility to deploy the required T&P, for timely and successful completion of the job, to any extent over and above those indicated in the above deployment plan (including those which are not covered in the plan submitted) without any compensation on this account.

39.0 MATERIALS

- 39.1 The contractor shall at his own expenses provide all stores and materials for all civil, mechanical, and electrical works including cement and steel (apart from materials shifted from Largi site), required for the work. Any materials damaged by the contractor while dismantling shed at Largi site will be replaced by the contractor free of charge and no extra charges will be payable to the contractor.
- 39.2 All stores and materials to be provided by the Contractor shall be of the best kind in conformity with the specifications laid down in the contract or as per relevant Indian standard and the Contractor shall, if requested by the Engineer, furnish proof to the satisfaction of Engineer that the materials so comply.
- 39.3 The Contractor for the materials to be supplied by him shall, at his own expense and without delay, supply to the Engineer samples of materials proposed to use in the works. The Engineer shall within seven days of supply of samples or within such further period as he may require will intimate to the Contractor in writing, whether samples are approved by him or not. If samples are not approved, the Contractor shall forthwith arrange to supply to the Engineer for his approval fresh samples complying with the specifications laid down in the Contract. Any delay in approval of samples (original or fresh ones) shall not make the contractor eligible for any compensation.
- 39.4 The Engineer shall have full powers to require removal of any or all of the materials brought to site by the Contractor which are not in accordance with the Contract

specifications or do not conform in character or quality to samples approved by him. In case of default on the part of the Contractor in removing rejected materials, the Engineer shall be at liberty to have them removed by other means. The Engineer shall have full powers to procure other proper material to be substituted for rejected materials and in the event of the Contractor refusing to comply; he may cause the same to be supplied by other means. All costs, which may attend upon such removal and / or substitution, shall be borne by the Contractor.

- 39.5 The Contractor shall indemnify BHEL, its representatives or employees against any action, claim or proceeding relating to infringement or use of any patent or design or any alleged patent or design rights and shall pay any royalties or other charges which may be payable in respect of any article or material or part thereof included in the Contract. In the event of any claim being made or action being brought against BHEL or any agent, servant or employee of BHEL in respect of any such matters as aforesaid, the Contractor shall immediately be notified thereof, provided that such indemnity shall not apply when such infringement has taken place in complying with the specific directions issued by BHEL but the Contractor shall pay any royalties or other charges payable in respect of any such use, the amount so paid being reimbursed to the Contractor only if the use was the result of any drawings / specifications issued after submission of the tender.
- 39.6 The Engineer shall be entitled to have tests carried out as specified in the Contract for any materials supplied by the Contractor other than those for which, as stated above, satisfactory proof has already been furnished, at the cost of the Contractor and the Contractor shall provide at his expense all facilities which the Engineer may require for the purpose. If no tests are specified in the Contract, and the Engineer requires such tests, the Contractor shall provide all facilities required for the purpose and the charges for these tests shall be borne by the Contractor only. The cost of materials consumed in tests shall be borne by the Contractor in all cases except when otherwise provided.
- 39.7 In addition the Contractor shall perform / submit at his own cost such tests / samples as may be required by the Engineer out of the materials used by the contractor except for the costs of materials used in such tests/ samples.
- 39.8 Not Applicable
- 39.9 Material required for the works, whether brought by the Contractor or supplied by BHEL, shall be stored by the Contractor only at places approved by the Engineer. Storage and safe custody of material shall be the responsibility of the contractor.
- 39.10 BHEL's officials concerned with the Contract shall be entitled at any time to inspect and examine any materials intended to be used in or on the works, either on the Site or at factory or workshop or other place(s) where such materials are assembled, fabricated, manufactured or at any place (s) where these are lying or from which these are being obtained and the Contractor shall give such facilities as may be required for such inspection and examination.

- 39.11 All materials brought to the Site shall become and remain the property of BHEL and shall not be removed off the Site without the prior written approval of the Engineer. But whenever the Works are finally completed and advance, if any, in respect of any such material is fully recovered, the Contractor shall at his own expense forthwith remove from the Site all surplus material originally supplied by him and upon such removal, the same shall re-vest in and become the property of the Contractor.
- 39.12 It shall be the responsibility of the contractor to obtain prior approval of BHEL, regarding suppliers, type of electrodes etc. before procurement of welding electrodes. On receipt of electrodes at site these shall be subjected to inspection and approval by BHEL. The contractor shall inform BHEL details regarding type of electrodes, batch No.date of expiry etc. and produce test certificate for each lot / batch with correlation of batch/ lot no. with respective test certificate. No electrode will be allowed to be used without valid test certificate.
- 39.13 All charges on account of Octroi, terminal or sales tax and other duties on material obtained for the works from any source shall be borne by the contractor.

40.0 EXECUTION OF WORK

- 40.1 The work shall be executed in a workman like manner and to the entire satisfaction of the Engineer and as per technical specification issued with tender, IS codes, CPWD specifications/HP PWD specifications as applicable. In case of conflict, the decision of the Engineer shall be final & binding.
- 40.2 Not Applicable
- 40.3 Only BHEL approved make of electrodes will be used. All electrodes shall be heated and dried in the electric electrode-drying oven to the required temperature for the period specified by the Engineer before these are used in erection work. All welders shall have electrodes drying portable oven at the work spot. The electrodes brought to site will have valid manufacturing test certificate. The test certificate will have correlation with the lot no. / batch no. given on electrode packets. No electrodes will be allowed to use in the absence of above requirement. The thermostat and thermometer of electrode drying oven will be also calibrated and test certificate from Govt. approved/ accredited test house traceable to National / International standards will be submitted to BHEL before putting the oven in use. Periodical calibrations for the same shall also be arranged by the contractor within the finally accepted rates.

40.4 SETTING OUT

- 40.4.1 The contractor shall be responsible to locate and set out the works. The contractor shall inform BHEL well in advance of the times & places at which he wishes to do work in the area allotted to him so that suitable datum points established by him are checked by BHEL / Customer to enable the contractor to proceed with the works. Any work done without being properly located may be removed and / or dismantled by BHEL / Customer at contractor's expense.

- 40.4.2 The contractor shall at his own expense take all proper and responsible precautions to preserve and maintain these datum marks to its true position. In the event of these marks being disturbed or obliterated by accident or due to any other cause whatsoever, the same may be deemed necessary placed by BHEL / Customer at contractor's expenses.

40.5 SITE DRAINAGE

- 40.5.1 All water including sub-soil water which may accumulate on the Site during the progress of the works or in trenches and excavations, including monsoon period shall be removed by the contractor from the Site to the satisfaction of the Engineer. It will also be responsibility of the contractor to de-water all the foundation pits, trenches with suitable de-watering methods like, pumping out, well point system etc. Considering the depth of water table at plant site. All such expenditure on de-watering shall be deemed to be included in quoted rates.

40.6 INSPECTION AND STAGE APPROVAL OF THE WORK

- 40.6.1 The owner or his duly authorised representative shall have at all reasonable times access to the contractor's premises or works and shall have the power to inspect drawings or any portion of the work, examine the materials and workmanship and shall have the authority to reject any work. This would be implemented through joint inspection by the representative of the owner and BHEL and in the form of joint protocols without any extra claims and loss of time and amount.
- 40.6.2 All work embracing more than one process shall be subject to examination and approval at each stage thereof and the Contractor shall give due notice in writing to the Engineer when each stage is ready. In default of such notice being received, the Engineer shall be entitled to approve the quality and extent thereof at any time he may choose and in the event of any dispute; the decision of BHEL Engineer there on shall be final and conclusive.

40.7 UNCOVERING AND MAKING GOOD

- 40.7.1 The Contractor shall uncover any part of the Works and/or make openings in or through the same as the Engineer may from time to time direct for his verification and shall reinstate and make good such part to the satisfaction of the Engineer. If any such part has been covered up or put out of view after being approved by the Engineer and is subsequently found on uncovering to be executed in accordance with the Contract, the expenses of uncovering and / or making opening in or through, reinstating and making good the same shall be borne by BHEL. In any other case all such expenses shall be borne by the Contractor.

40.8 DISCREPANCIES AND ADJUSTMENT OF ERRORS

- 40.8.1 The several documents forming the Contract are to be taken as mutually explanatory of one another, detailed drawings being followed in preference to small

scale drawings, and figures dimensions in preference to scale, and special conditions in preference to general conditions.

40.8.2 In case of discrepancies between schedules of quantities, the specification and / or the drawings, the following order of preference shall be observed.

- (a) Technical Specifications
- (b) Description in schedule of quantities
- (c) Special conditions of contract
- (d) General conditions of contract

If there are varying or conflicting provisions made in any one document forming part of the contract, the Engineer shall be the deciding authority with regard to the document.

40.8.3 Any error in description, quantity in schedule of quantities or any omission there from shall not vitiate the contract or release the contractor from the execution of the whole or any part of the works comprised there in according to the drawings and specifications or from any of his obligations under the contract.

40.8.4 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 discrepancies between description in words and figures quoted by a tenderer, the lesser of the two will be treated as valid rate.
- (b) In case of any mismatch between 'Amount' calculated based on 'Unit Rate' & 'Amount' as entered in the Rate Schedule, the lower of the two shall be considered for evaluation and award.
- (c) All errors in totaling in the amount column and in carrying forward totals shall be corrected.

40.8.5 If neither drawing nor specification contain any mention of minor details of construction which in the opinion of the Engineer whose decision shall be final and conclusive, are reasonable and obviously and fairly intended for satisfactory completion of work, such details shall be provided by the contractor without any extra cost, as if they were specially mentioned and shall be deemed to be included in the contract.

40.9 HEALTH, SAFETY & SOCIAL ACCOUNTABILITY

40.9.1 **BHEL-Power Sector (NR) is ISO 9001-2000, ISO 14001-1996, OHSAS 18001-1999, BS 7799 and SA-8000 certified company. Quality of work, to customer's satisfaction and system requirements is the essence of these certifications. The contractor in all respects will organize his work, systems, environment, process control documentation, tools, plant, inspection, measuring and testing equipments etc. as per instructions of BHEL engineer.**

The contractor shall also comply with applicable legislation and regulations with regards to Health, Safety and Environmental aspects (HSE) for minimizing risk arising from occupational health, safety hazards, controlling pollution and wastage and he will be responsible for Health, Safety & Environment management at site for the construction activities to be carried out by them in accordance with requirements given under section I (a) of GCC.

40.9.2 Besides provision with regard to SAFETY under Clause 27, Contractor shall note that Explosives shall not be used on the work by contractor except with permission in writing of the ENGINEER and in manner and to the extent to which he has prescribed. Where explosives are used, the same shall be stored in a special magazine to be provided by and at the cost of the contractor who shall be liable for all damages, losses and injury to any person or property and shall be responsible for complying with all statutory obligations in these respect. The contractor should have the valid license for carrying out the blasting work and also for storage of explosives.

40.9.3 The contractor shall comply with following towards Social Accountability;

- (a) The contractor shall not employ any employee less than 15 years of age in pursuant to ILO convention. If any child labour were found to have been engaged , the Contractor shall be levied with expenses of bearing his education expenditure which will include stipend to substantiate appropriate education or employ any other member of family enabling to bear the child education expenditure.
- (b) The contractor shall not engage Forced/Bonded Labour and shall abide by abolition of Bonded Labour System(Abolition) Act, 1976.
- (c) The contractor shall maintain Health & safety requirement as stipulated in the Contract and Contract Labour(Regulation & Abolition) Act,1970.
- (d) The Contractor shall abide by UN convention w.r.t Human Rights and shall be liable for Discrimination/Corporal punishment for failure in meeting with relevant requirements.
- (e) The Contractor shall abide the requirement of Contract Labour(Regulation & Abolition) Act,1970 for working hours.
- (f) The Contractor shall abide by the Statutory requirement of Minimum Wages Act 1948, payment of Wages Act 1936.
- (g) The Contractor shall arrange potable drinking water to its employees & workers.

40.9.4 Contractor has to ensure availability of adequate First Aid facilities with trained nurse. Contractor has to maintain contact with local hospital having scanning & other ultra modern medical facilities required during emergency.

40.10 NUISANCE

40.10.1 The Contractor shall not at any time do, cause or permit any nuisance on Site or do anything which shall cause unnecessary disturbance or inconvenience to owners, tenants or occupiers of other properties near the Site and to the public generally.

40.11 MATERIAL OBTAINED FROM EXCAVATION

- 40.11.1 Materials of any kind obtained from excavation on the Site shall remain the property of BHEL / its client and shall be disposed of as the Engineer may direct, at no extra cost.

40.12 TREASURE, TROVE, FOSSILS ETC.

- 40.12.1 All fossils, coins, articles of value or antiquity and structures and other remains or things of geological or archaeological interest discovered on the site shall be the absolute property of BHEL / BHEL's client and the Contractor shall take reasonable precautions to prevent his workmen or any other person from removing or damaging any such article or thing, shall immediately upon discovery thereof and before removal acquaint the Engineer with such discovery and carryout the Engineer's directions as to the disposal of the same.

40.13 PROTECTION OF WORKS

- 40.13.1 Trees designated by the Engineer shall be protected from damage during the course of the Works and earth level within 1 meter of each such tree shall not be charged. Where necessary, such trees shall be protected by providing temporary fencing.

- 40.13.2 The contractor shall provide and maintain at his own expense all lights, guards, fencing and watching when and where necessary or required by the Engineer for the protection of the Works or for the safety and convenience of those employed on the Works or the public.

- 40.13.3 The contractor shall have total responsibility for protecting his works till it is finally taken over by the Engineer. No claim will be entertained by the Engineer for any damage or loss to the contractor's works and the contractor shall be responsible for the complete restoration of the damaged works to its original condition to comply with the specifications and drawings. Should any such damage to the contractor's works occur because of other party not under his supervision or control, the contractor shall make his claim directly with the party concerned. The contractor shall not cause any delay in the repair of such damaged works because of any delay in the resolution of such disputes. The contractor shall proceed to repair the work immediately and no cause thereof will be assigned pending resolution of such disputes.

40.14 RECORD FOR MATERIALS CONSUMED

- 40.14.1 The contractor shall maintain and furnish to the Engineer the record of materials consumed in the works for each activity. The statement showing the theoretical vis-à-vis actual consumption of specified materials, such as structural /reinforcement steel, cement, bitumen, lead, paint etc., shall be enclosed along with the running bills submitted by the contractor. Contractor has also to furnish the test results of the concrete cubes, bricks, stone aggregates and other materials used in the work as per IS specifications.

40.15 PROTECTION OF EMBEDMENTS, BOLTS ETC

40.15.1 The contractor shall ensure proper protection to the satisfaction of the Engineer, of all bolts, inserts, embedment etc. From weather etc/ by greasing, rapping them with gunny bags or canvas or by any other means as directed by Engineer. Cost of such protections shall be deemed to be included in the rates quoted for the item.

40.16 CLEARANCE OF SITE AND REPAIRS.

40.16.1 Contractor has to clear the site / area where mechanical and electrical erection work is to be commenced / or in progress. The contractor shall remove construction materials and equipment lying in the vicinity and causing obstruction in the erection work within 24 hrs. Notice. In case, he fails to clear the site, this will be done at his risk & cost by BHEL.

40.17 QUALITY ASSURANCE

40.17.1 The contractor has to establish / arrange at site the field testing facilities for testing of civil construction materials and concrete cubes for ensuring the proper quality, grade and strength of the materials used in the construction in line with approved field quality check list of BHEL/ its client. Contractor has to submit detailed report for testing of all material used etc. All testing shall be done as per IS code specifications/ BHEL's quality plan. If further test is required by the engineer to be carried from outside laboratory, the cost of the same shall be borne by the contractor.

40.18 COMPLETION OF WORK

40.18.1 The works shall be completed to the entire satisfaction of the Engineer and in accordance with the completion schedule as specified in the Contract, and all unused stores and materials, tools, plant, equipment, temporary buildings, site office, labour hutments and other things shall be removed and the site and work cleared of rubbish and all waste materials and delivered up clean and tidy to the satisfaction of the Engineer at the Contractor's expenses.

40.18.2 BHEL shall have power to take over from the Contractor from time to time such sections of the work as have been completed to the satisfaction of the Engineer. Such work however shall not be treated as have been completed until the balance/extra works are executed to the satisfaction of Engineer. The Guarantee period shall commence only after handing over of the entire works.

40.18.3 The Engineer shall certify to the contractor the date on which the work is completed and the date thereof.

40.19 RECORDS AND MEASUREMENTS

40.19.1 All items having a financial value shall be entered in BHEL measurement Book so that a complete record is obtained of all works performed under the Contract. The

measurements shall be taken jointly by any person duly authorised on the part of BHEL and by the Contractor.

40.19.2 The Contractor shall, without extra charge, provide assistance with appliances and other things necessary for measurement and shall bear all the cost of measurement of his work.

40.19.3 Measurement shall be entered in BHEL Measurement Book and signed and dated by both parties at the site on completion of measurement. If the Contractor objects to any of the measurements recorded on the behalf of BHEL, a note to that effect will be made in BHEL Measurement Book or against the item or items objected to and such note shall be signed and dated by both the parties engaged in taking the measurement.

40.19.4 If, as a result of such objection, it becomes necessary to re-measure the work wholly or in part the expense of such re-measurement shall be borne by the contractor.

40.19.5 If the Contractor's representative fails to attend when required, the Engineer shall have power to proceed by himself to take measurements and in that case these measurements shall be accepted by the Contractor as final.

41.0 METHODS OF MEASUREMENT

41.1 Method of measurements if not specified in the tender, shall be as per relevant IS Codes / CPWD codes.

42.0 DEVIATION

42.1 The Contractor shall not make any alteration in addition to or omission from the work as described in the tender documents except in pursuance of the written instructions of the Engineer. No such deviation from the work described in the tender documents shall be valid unless the same has been specifically confirmed and accepted by the Engineer in writing.

42.2 The Engineer may deviate, either by way of addition or deduction, from the work so described. The value of all additions and deductions shall be added to or deducted from the Contract sum.

43.0 VALUATION OF DEVIATIONS

43.1 For any deviations carried out shall be governed by CPWD schedule of rates with cost index applicable and for Non-Schedule works, Direct cost + 15% towards OH and profit element. The L.S. cost adjustment shall be done accordingly.

44.0 COMPLIANCE TO REGULATIONS AND BYELAWS

44.1 The Contractor shall conform to the provisions of any statute relating to the work and regulations and bylaws of any local authority and of any water and lighting Companies or Undertaking with whose system the work is proposed to be connected. He shall, before making any variation from the drawings or the specifications that may be necessitated for such connections give the Engineer, notice specifying the variation proposed to be made and the reasons therefore and shall not carryout any such variation until he has received instructions from the

Engineer in respect thereof. The Contractor shall be bound to give all notices required by statute, regulations or bye-laws as aforesaid and to pay all fees and taxes payable to any authority in respect thereof.

45.0 FACILITIES TO BE PROVIDED BY BHEL / CONTRACTOR

- 45.1 BHEL shall provide free of charge limited open space for office and store inside the stores area at site. It is the responsibility of the contractor to construct sheds for his purposes, provide all utilities as a part of his scope of work.
- 45.2 Contractor shall be responsible for providing all necessary facilities like residential accommodation, transport, electricity, water, medical facilities etc. as required under various labour laws and statutory rules and regulations framed there under to the personnel employed by him.
- 45.3 Construction power for the purpose shall be arranged by the contractor from local electricity authorities at his own cost . Contractor may also have his own DG set for the construction purpose. Contractor at his own cost also shall do further distribution of power for the purpose of construction. All wiring must comply with local regulations and will be subject to Engineer's inspection and approval before connecting supply. The contractor shall have no claims for the power interruptions and it shall not be the excuse for delay of works. The contractor may have his own arrangements for back up power supply.
- 45.4 Provision of distribution lines of power from the central points to the required place with proper distribution boards observing the safety rules laid down by the authorities of the state shall be done by the contractor, supplying all the materials like cables, distribution board, switch boards, TPN, CBS, ELCBS/ MCCBS / Copper / Brass clamps, copper conductor, change over switches pipes etc. at his own cost. If any failure is caused in supply of the power and water, it is the responsibility of the contractor to make alternate arrangements at his cost. The contractor shall adjust his working shift / hours accordingly and deploy additional manpower if necessary so as to achieve the targets.
- 45.5 In case of power cuts / load shedding, no compensation for idle labour or extension of time for completion of work will be given to contractor.
- 45.6 Adequate lighting facilities such as flood lamps, hand lamps and area lighting shall be arranged by the contractor at the site of construction, contractor's material storage area etc. within finally accepted rates.
- 45.7 **Water for Construction/Drinking purposes** shall be arranged by the contractor at his own cost. It will be the responsibility of the Contractor to satisfy himself that the water drawn by him is fit for construction/ consumption and adequately treat such water at his cost when it is not found fit for the said purposes. The Contractor should make arrangements for storage of sufficient quantity of water required for work.
- 45.8 Not Applicable

- 45.9 The Contractor shall during the progress of the work, provide, erect and maintain at his own expenses all necessary temporary workshops, stores, consumables, offices, etc. Required for the proper and efficient execution of the work. The planning, setting and erection of these buildings shall have the approval of the Engineer and the Contractor shall at all times keep them tidy and in a clean and sanitary condition to the entire satisfaction of the Engineer.
- 45.10 On completion of work or as and when required by BHEL, all the temporary buildings, structures, pipe lines, cables etc. Shall be dismantled and leveled and debris shall be removed as per instruction of BHEL by the contractor at his cost. In the event of his failure to do so, same will be got done by the Engineer and expenses incurred shall be recovered from the contractor along with prevailing overhead. The decision of BHEL Engineer in charge in this regard shall be final.

46.0 PROGRESS REPORTING

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

47.0 DRAWING AND DOCUMENTS

- 47.1 The contractor shall visit the site and get acquainted himself with the topography of the land to be leveled for the purpose of construction of items called for in the tender and see for himself the basic layout at that place. Based on that layout, contractor shall

submit the drawings for the installation along with all the details and associated civil works. The reference sketches are enclosed with the tender.

- 47.2 The data furnished in various Annexures enclosed with this tender specification are only approximate and for guidance.
- 47.3 Should any error or ambiguity be discovered in the specification or information the contractor shall forthwith bring the same to the notice of BHEL before commencement of work. BHEL's interpretation in such cases shall be final and binding on the contractor. The work being awarded on **M²**/ RM/Nos. basis, it will be contractor's responsibility to take care of such ambiguities at the time of quoting. No extra payment will be made.
- 47.4 Deviation from design dimensions should not exceed permissible limit. The contractor shall not correct or alter any dimension / details, without specific approval of BHEL.

48.0 DELAY AND EXTENSION OF TIME

48.1 If, in the opinion of the Engineer, the work is delayed

- (a) By reason of abnormally bad weather, 'OR'
- (b) By reason of serious loss or damage by fire, 'OR'
- (c) By reason of civil commotion, local combination of workmen, strike or lockout, affecting any of the trades employed on the work, 'OR'
- (d) By delay on the part of the agency or tradesmen engaged by the BHEL in executing work not forming part of the Contract, 'OR'
- (e) By reason of any other cause which in the absolute discretion of the Engineer is beyond the Contractor's control,

Then in any such case, the Engineer (or higher authority) may make fair and reasonable extension in the completion dates of the individual items of work or the Contract as a whole. Such extension which will be communicated to the Contractor by the Engineer in writing shall be final and binding on the Contractor. No other claim in this respect for compensation or otherwise howsoever is admissible. Upon the happening of any such event causing delay, the Contractor shall immediately give notice thereof in writing to the Engineer but shall nevertheless use constantly his best endeavor to prevent or make good the delay and shall do all that may reasonably be required to the satisfaction of the Engineer to proceed with the work.

49.0 PRICE VARIATION

49.1 The finally accepted rates for scope of work as defined in this tender are subjected to price variation provisions as per following formula:

$$0.75 \times P0 (F1 - F0)$$

$$P1 = \frac{\text{-----}}{F0}$$

P1=Increase/Decrease in billing amount (variation) for the particular month of billing.

P0 = Gross billed amount for the month as per contract provisions.

F1 = All India CPI published by Labour bureau, Simla, Govt. of India, for Industrial workers (Base 1982 =100) applicable for the month under consideration i.e. for which bill has been raised.

F0 = All India CPI published by Labour bureau, Simla, Govt. of India, for Industrial workers (Base 1982 =100) applicable for the applicable for the month of opening of technical bid.

49.2 The contractor will be required to raise the bills for price variation payments on a monthly basis irrespective of the facts whether any increase or decrease in CPI. Price variation as per above formula will be calculated and paid/deducted on the total contract value (excluding payments towards extra works and over run, if any) on month-to-month basis from the date of award. BHEL however reserves the rights to freeze variation for that much of duration of delays, from time to time, which are entirely attributable to the contractor. Average of applicable index of PVC paid shall be taken as index for PVC for final 5% amount.

49.3 With the provision of price variation as above no claim / compensation on account of any increase whatsoever, (irrespective of whether variation are steep / unanticipated or not compensated by the above variation provisions in full towards minimum wages, consumables, electrodes, gases or any other item/ reason) will be payable during the entire period of execution including extended period, if any.

50.0 INCOME TAX, SERVICE TAX, VAT AND SALES TAX ETC.

50.1 **TDS under Income Tax, Sales Tax, VAT etc,** if any, shall be deducted at prevailing rates on gross invoice value from the running bills unless Exemption Certificate from appropriate Authority / Authorities is furnished.

50.2 Price quoted shall be inclusive of all taxes except service tax. The service tax, as legally leviable & payable by the contractor under the provisions of applicable law/act, shall be paid by BHEL as per contractor's bill. However, contractor shall have to submit proof of service tax deposited by them immediately after the deposit but not later than the next bill submitted after the due date of deposit. The contractor shall furnish proof of Service Tax registration with Central Excise Division covering the services covered under this contract. Registration should also bear endorsement for the premises from where the billing shall be done by contractor on BHEL for this project The contractor shall obtain prior approval of BHEL before billing the service tax amount.

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

50.3 In VAT applicable States, "Tax Invoice" if required under the relevant State VAT law shall be submitted alongwith other compliances as per concerned VAT Act.

50.4 Contractor shall get his organization registered with concerned sales tax/VAT authorities within 15 days of award of this contract, if applicable. The delay on this account and delay in bringing the material shall be to contractor's account and no extension of time shall be allowed on this account. The sales tax/VAT registration for this contractor shall be forwarded to BHEL within 30 days from the date of LOI. In case the contractor is already registered for sales tax/VAT with Govt. Authorities he must quote his registration no, while submitting their tender.

50.5 Contractor has to make his own arrangement at his cost for completing the formalities, if required, with Sales Tax/VAT Authorities, for bringing their materials, plants, and equipment at site for the execution of the work under this contract.

51.0 TIME SCHEDULE

51.1 **The contractor is required to commence the work within 7 days from the date of issue of letter of intent** unless BHEL decides to fix any other later date. However, BHEL Engineer will certify the actual date of start of work after adequate mobilisation of materials, manpower and T&Ps by the contractor.

51.2 **Entire work under this contract is required to be completed, in all respect including handing over, within 3 MONTHS from the schedule date of start of work THE PROGRAMME OF EXECUTION / SHALL BE SUBMITTED BY CONTRACTOR WITH THE TECHNICAL BID. In case of delay of work due to reasons not attributable to the contractor, time extension will be granted by BHEL but no over run compensation will be payable.** Contractor has to mobilize adequate resources to meet BHEL commitments as indicated from time to time.

51.3 The work under the scope of this contract is deemed to be completed in all respects, only when all the works are carried out as per satisfaction of BHEL. The decision of BHEL on completion date shall be final and binding on the contractor.

52.0 TERMS OF PAYMENT

52.1 The Contractor shall be paid monthly running bill to a maximum of 95% of the value of the work actually executed on site as per Rate Schedule provided the work has been executed to the satisfaction of the Engineer. The Engineer may after a measured bill allow & certify payment to the contractor on the basis of abstract measurement bill submitted by the contractor. From these amount

recoveries such as advances, security deposit, taxes etc. would be made. The certificate of the Engineer regarding such approval and passing of sums so payable shall be final and conclusive against the contractor.

52.2 The 2.5% of Contract Value shall be payable on completion of all pending work, rework wherever required, site clearing and reconciliation of materials.

52.3.1 The balance 2.5% of contract value will be payable on submission and passing of Final bill. The certificate of Engineer regarding such approval and passing of sums shall be final and conclusive against the contractor.

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

52.4 Any certificate relating to the work done may be modified by any subsequent interim certificates or by the final certificates and no certificate of the Engineer supporting an advance payment shall of itself be conclusive evidence that any work or materials to which it relates are in accordance with the contract.

53.0 INSURANCE

53.1 Besides provisions under clause no. 29.0 of GCC regarding insurance, the following shall also be applicable. The contractor shall also take care of the same while submitting their offer.

53.2 The contractor shall arrange the insurance for any liability arising out of storage and installation of the items under installation. The insurance cover should also include for the damage to the surrounding property in the vicinity of the work area.

54.0 RATE SCHEDULE CUM BOQ/VARIATION

54.1 Contractor shall fully understand description and scope of work before quoting. The scope of work and responsibility of the contractor as mentioned under these specification shall be covered within the quoted / finally accepted rates.

54.2 **The Tenderer shall quote the prices/rates for entire scope of work as per the rate schedule only, in part II price bid (Original).** Conditional price bids or price bids with any deviation / clarification etc. are liable to be rejected. No cutting / erasing / over writing shall be done.

54.3 Contractor's total quoted price as per rate schedule will be taken as tentative only. The quantities indicated against each item may vary to any extent and no compensation will be payable in variation of individual quantity. The contractor undertakes to erect / commission actual quantities as per advice of BHEL Engineer and accordingly the final contract price shall be worked out on the basis of quantities actually erected at site and payments will also be regulated for the same. However, in case of overall reduction in contract value (as indicated in LOI), beyond 30%, the contractor will be eligible for compensation as per the following provision:

“ The actual executed value shall be raised by 10% subject to the condition that the total value of work executed plus increase as above shall be limited to 70% of the awarded contract value.”

55.0 FINAL BILL

- 55.1 As soon as possible after the completion of the work to the satisfaction of the Engineer, the Contractor shall prepare a certified final accounts on BHEL forms, in duplicate. It shall be accompanied by the all abstracts, vouchers, etc. in support thereof and shall be prepared in the manner prescribed by the Engineer.

56.0 LIQUIDATED DAMAGES(LD)

- 56.1 For delay in completion of work attributable to the contractor, the LD shall be applicable at the rate of ½% of the contract value per week of delay or part thereof limited to a ceiling of 10% of the contract value as mentioned under clause no.25.5 of the GCC of the tender.

57.0 SECURITY DEPOSIT

- 57.1 The contractor shall submit Security Deposit within 15 days from the date of issue of LOI as per clause no. 16.2 of the General Conditions of Contract (GCC). In case the contractor opts to furnish Bank Guarantee as a part of Security Deposit, the BG shall be issued as per the Performa enclosed as per Annexure-H of the GCC and also that the BG should be issued preferably through any of the Member Banks listed on Page No. 34(a) of the GCC;

For BG through any other Nationalized Bank (Not covered in the list of Member Banks of GCC), the discretion of its acceptance shall lie solely with BHEL.

58.0 OTHERS

- 58.1 In case of any contradiction between General Conditions of Contract (GCC) and Special Conditions of Contract (SCC), the latter shall prevail.
- 58.2 The tenderer shall specifically confirm he has inspected the site of work and is fully conversant with the prevailing conditions under which work is to be executed and will not raise claim of any nature due to lack of knowledge of site condition. He will also confirm that local taxation laws at the site have been clearly understood by him.
- 58.3 The Price Bids of only those bidders will be opened who will be qualified for the subject job on the basis of pre-qualification evaluation / Techno-commercial bids and acceptance of customer. BHEL reserves the right to reject the bidders with unsatisfactory past performance in the execution of a contract. BHEL's decision in this regard shall be final & binding.

Annexure-I

**INDICATIVE LIST OF T & Ps TO BE ARRANGED BY THE
CONTRACTOR AT HIS OWN COST**

Sl. No.	EQUIPMENT	QTY
1	CONCRETE MIXTURE M/C of SUITABLE CAPACITY	1 NO (minimum)
2	CONCRETE VIBRATORS	AS PER WORK REQUIREMENT
3	JCB, Excavator, Dozer, Jack Hammers with compressor, Equipment for controlled blasting	AS PER WORK REQUIREMENT
4	Trucks/lorries	AS PER WORK REQUIREMENT
5		
6	WATER TANKER	1 NO. Minimum
7	DEWATERING PUMP	AS PER WORK REQUIREMENT
8	WINCHES	AS PER WORK REQUIREMENT
9	WELDING MACHINES	AS PER WORK REQUIREMENT
10	PORTABLE OVENS	AS PER WORK REQUIREMENT
11	ROAD ROLLERS	AS PER WORK REQUIREMENT

Notes:

- The above list specifies only major T&Ps (may not be complete to be deployed by the contractor). All additional / other tools and plants including lorries/trucks, tools & tackles, devices, machines, measuring instruments etc. in good and safe working conditions which are required for satisfactory & timely completion of work shall also be deployed by the contractor within finally accepted rate / price.
- For other terms and conditions regarding above items, also please refer clause 38 T&Ps/IMTEs).

Annexure-II**INDICATIVE LIST OF IMTEs TO BE ARRANGED BY THE CONTRACTOR AT HIS OWN COST**

SL NO	EQUIPMENT	QTY
1	THEODOLITE	1 NO
2	DUMPY LEVEL	1 NO
3	MEASURING TAPE	AS PER REQUIREMENT

NOTES:

1. The above list specifies only major IMTEs (may not be complete to be deployed by the contractor). Contractor has to have arrangements for material & concrete testing. All additional / other IMTEs / measuring instruments etc. in good and safe working conditions which are required for satisfactory & timely completion of work shall also be deployed by the contractor within finally accepted rate / price.
2. Other terms and conditions regarding above items please also refer clause 38 T&Ps/IMTEs).

[A] GENERAL SCOPE OF WORK

1. Dismantling of existing shed at village Larji without damages, safe transportation to new site located near Allain Duhangan H.E.P site and reconstruction of store shed at new site by reusing material of existing store shed. The distance between proposed site near Allain Duhangan from the existing site at Larji is approximately 100 kms.

The scope includes:

A.) AT LARJI, HIMACHAL PRADESH

- Removing without damage existing GS sheet roofing .
- Removal of Double skin and single skin Bison Board/ Hardboard side cladding and partitions without damage.
- Dismantling/Dismembering Structural steel work in built up welded/bolted sections in trusses, purlins, columns, rolling shutters,etc. without wastage/scrap.

B) TRANSPORTATION

- Transportation of all dismantled material as per instructions of Engineer I/c from Village Larji to Allain Duhangan, HP

C) AT ALLAIN DUHANGAN, HIMACHAL PRADESH

-MECHANICAL

- Earth work including excavation, filling, compaction, leveling and grading.
- Plain & Reinforced cement concrete, Random rubble and Brick Masonry (Full and half brick work).
- Erection using existing(from Lارجي site)/new(Contractor scope) Structural & reinforcement steel, GS sheet for roofing/side cladding & partition work.
- Fixing and augmenting of rolling shutters
- Scaffolding & Formwork.
- Finishing work including plastering, flooring, false ceiling, painting of new and old work etc.
- Fixing of MS fixed and openable frames with glazing for door/windows.
- Disposal of scrap, site clearance.
- Drainage, Sanitary, Sewage & Water supply.
- Septic Tank/soak pit.
- Area Fencing & Area Lighting.
- Roadwork.
- Fire safety.

ELECTRICAL SCOPE OF WORK

- Providing common main MCB panel to cater requirement of shed, laying incoming cable for the above panel from the outside nearest source, lights & sockets requirement etc.,
- Providing 15 Nos. of 2 x 40W industrial type fluorescent fittings for shed and reqd Nos. of 2 x 40W/1x40W decorative type fluorescent fittings making for office&wiring as independent point . Fixing of fittings will be on the roof top by providing required length of down rod as per site condition.
- Providing air circulator, pedestal fan, exhaust fan, 5Amps socket and 15Amps socket.
- Providing earth electrode and earth conductors as per requirement.
- The scope of work has to be completed in all the manner to meet the functional requirement by covering all the left out allied work in BOQ thereby to commission the system as a whole.

All the material used to be approved by Engineer-in-charge and in case of non-availability of approved make of material, BHEL Engineer-in-charge is authorized to substitute the same.

The scope includes supply of all materials labour, consumables, tools & plants, transportation, storage, sample testing, etc., and any other materials to complete the work. The existing material is to be reused for reconstruction of the store shed. **If in any case, the existing material is not reusable/damaged then new item/material has to provided and fixed as per site conditions and directions of Engineer I/C. Tentative list of items are included in BOQ.**

2. Unless otherwise specified, the work to be provided by the contractor for the items mentioned in the “Bill of Quantities”, shall include but not be limited to the following:
 - a) Furnishing all labour, materials, supervision, construction plans, equipment supplies, transport, to and from the site, fuel, electricity, compressed air, water, transit and storage insurance and all other incidental items and temporary works not shown on specified but reasonably implied or necessary for the proper completion, maintenance and handling over the works, except in accordance with the stipulations laid down in the contract documents and additional stipulations as may be provided by the engineer during the course of works.
 - b) Furnishing samples of all materials required by the engineers for testing / inspection and approval for use in the works. The samples may be retained by the engineer for final incorporation in the works
 - c) Furnishing test reports for the products used or intended to be used, if called for the specifications or if so desired by the engineer.
 - d) Giving all notices, paying all fees, taxes etc. in accordance with the general conditions of contract, those are required for all works including temporary works.

- e) Arranging manufacturer's supervision for items of work done as per manufacturer's specifications when so specified.
 - f) Providing all incidental items not shown or specified but reasonably implied or necessary for the successful completion of the work in accordance with contract.
3. The contractor shall be fully responsible for the proper and accuracy layout, alignment, orientation of all elements of the construction work which shall be carried out by him accurately in accordance with drawings and obtaining clarifications from BHEL/Architects if required by him, including for any discrepancy if any, before the work is executed by him. The setting out and the construction work shall be carried out by suitable precision instruments and checked from time to time and got approved. The contractor shall provide all equipment and instruments as required at the site at his own cost.
4. BHEL-Power Sector (NR) is ISO 9001-2000, ISO 14001-1996 and OHSAS 18001-1999 certified company. Quality of work, to customer's satisfaction and system requirements is the essence of these certifications. The contractor in all respects will organize his work, systems, environment, process control documentation, tools, plant, inspection, measuring and testing equipments etc. as per instructions of BHEL engineer.

The contractor shall also comply with applicable legislation and regulations with regards to Health, Safety and environmental aspects for minimizing risk arising from occupational health, safety hazards, controlling pollution and wastage.

[B] TECHNICAL SPECIFICATION

1.STORE SHED

The Store shed shall be developed, on land given, having the built up area of Approx. 350 Sqm. Broadly, the construction of store shed involves reuse of materials dismantled from shed at Village Larji and transported to Allain Duhangan. **THE LAYOUT PLAN OF THE STORE SHED IS ATTACHED FOR REFERENCE.**

- GS sheet roofing to be removed/ dismantled with due care so that there is no scratches/dents/cracks in the sheet. All the J hooks, bolts, washers, etc. are to be removed completely and the sheets shall be free from any intrusions. Ridges/valleys may also be dismantled similarly.
- Removal of bison board/ hardboard side cladding and partitions whether single skin or double skin shall be removed with MS/AL frames as reusable modules. In cases where electricals fittings/ wiring is present, it shall be removed prior to removal of cladding. Breakage/damage shall have to be avoided to the extent possible.
- All the frames and leaves of doors/windows/ventilators shall be dismantled without damage. The glazing shall also be prevented from major damage. The reused MS frames, leaves, brackets etc shall be painted with two coats of approved enamel paint before they are refixed at Allain Duhangan.

- The structural steel framework including channels, columns, trusses, bottom ties, wind ties over the roof sheets along the purlins, shall be dismembered as a reusable units and stacked for transportation. The columns shall be removed from the foundation by unbolting of base plates. The foundation bolts shall be left/discarded. Structural members shall not be cut without the instructions of Engineer I/C.
- All other materials shall be discarded provided no special instructions by the Engineer I/C are given.
- All the dismantled/dismembered stacked material shall be safely transported to Allain Duhangan.
- The store shed area at Allain Dhungan shall be cleared of all vegetation, scrap and debris and levelled/graded for the start of construction work
- RCC foundation for structural steel columns shall be -0.90 below O.G.L (0.00 m) of size 0.9×0.9 mtr , 200 mm thick above PCC $1:4:8$ of 50 mm. 10 # bars @ 125 c/c bothways steel reinforcement shall be provided. The column pedestal shall be 300×300 mm 4×12 # with 8 # stirrups @ 150 c/c.
- The base plate level shall be at $+1.35$ m above G.L. The foundation bolts shall be 16 # 400 mm long and grouted well in the pedestal
- For masonry foundation, random rubble masonry shall be resorted with necessary excavation upto -0.60 m and 600 mm wide. Above a layer of PCC 50 mm thick, 460 mm wide course of 250 mm thickness and again a 345 mm wide course of 250 mm thickness shall be provided. Further 300 mm wide random rubble masonry upto $+1.35$ m flush with column pedestal shall be done. Plaster finish shall be provided as instructed. If readily available brick masonry instead of random rubble masonry shall be done above DPC. A DPC 40 mm shall be laid as specified at $+0.3$ m level.
- The purlin truss level shall be $+4.35$ m and all the angles, tees, channels, tubes transported shall be reproduced by providing gusset plates, polymer coated J or L hooks, 8 mm nut bolts including a coat of approved steel primer , hoisting, welding as required. Adequate ridges/valleys are to be provided for effective drainage and cutouts to be made as required at site.
- The main office flooring consists of raising the G.L by filling with good earth upto $+0.15$ providing yellow sand layer of 80 mm and PCC 80 mm over which 40 mm screed concrete flooring is to be done. The FFL shall be at $+0.350$ m.
- The plinth protection is of 50 mm thick PCC above random rubble masonry foundation of 460 mm base course at -0.300 m of 200 mm thickness and a course of 300 mm thick upto 0.250 m level with plaster finish as required.
- Extended roofing along side entrance shall also be provided as per the instructions of the Engr. I/C.
- Inside partition walls shall be reconstructed from the transported material upto $+3.350$ m keeping ht of internal partitions as 3.00 m as per layout plan.
- Partitions are to be distempered with two coats minimum and the outside plastered surface is to be painted with approved snowcem or equivalent cement paint with two coats minimum over a priming coat.
- Side cladding is double skin bison board/hard board of 3.00 m ht to be replicated as at previous site complete with frames, clips, anchoring, etc as required for satisfactory work including one/two coats of cement based basaed on the exterior and distempering inside as per the instructions of the Engineer I/C. required openings, for AC, etc shall be cut accordingly.

- The doors and window frames are to be refixed as brought and painted with one/two coats of approved enamel paint and the flush doors as specified shall refixed as brought or new work provided as per available frame sizes as per the instructions of the engineer I/C.
- The doors will have all fixtures like aldrops, tower bolts, handles, locking arrangement, wind stopper etc. The flush door shutters will be of minimum 35mm thick, solid core block board, with both side laminated with thick to 0.8 to 1mm.
- The windows/ventilators shall be MS glazed with 6mm glass paneling as per existing frame sizes painted with approved synthetic enamel paint.
- The door & windows are to be properly fixed with the wall using hold faster of minimum 200mm long.
- The windows will have fixtures like hook and eye, towel bolts, minimum of two handles, etc.
- The ceramic wash basins will be of size 550mm min. approved colour & make alongwith mirror of size 600 x 450mm minimum, towel rail, soap dish etc.
- All the sanitary fittings shall be of approved colour and make.
- All required G.I. water lines (min 15mm dia) shall be concealed under walls for internal plumbing and external pipes should be underground and painted with approved anti corrosive paint.
- Stoneware pipes for sewer lines (100mm – 150mm) shall be laid at a slope of atleast 1:150 with manholes at distance not more than 30 mtrs.
- A soak pit of minimum 1.2mm dia and depth to suit at site is to be provided at a distance of atleast 500 mtrs. from office complex.
- Other fixtures required for proper functioning like traps, chambers wall plugs, clamps, screws, (low height fibre made), GI fittings like unions, elbows, bends, valves etc shall be provided as required.
- Flushing cisterns shall be of minimum 5Ltr capacity each.
- Taps for water wash basins & toilets along soap dish etc. are in the contractor's scope. Contractor to note no fixtures, specials or any material will be given for any work which are required for the completion of works.
- The false ceiling shall consist of 12mm thick Gypsum board laid over Aluminium Tees and edge angles at a grid size of 600mm x 600mm with arrangements for lighting fixtures, Fans etc as per site requirements. The false ceiling shall be at purlin truss level.
- One 1000 Ltr. PVC water tank is to be provided at the side of the building with supporting structure of 3.60m height made with 65 x 65 x 6mm and 50 x 50 x 6mm angles duly painted with 2 coats finish paint over a primer coat provided and the required incoming and outgoing water lines to the services with minimum 15mm dia GI pipe, is in the contractor scope only.
- Complete Electrification alongwith necessary lighting-fixtures, fans, necessary cables, MCB, ELCB, Main switch, Energy meter, Junction box, switches, switch boards, Plug points etc. are in the contractor's scope.
- Contractor has to ensure safe installation compliance of local authorities statutory requirement.
- The necessary covers required for the MCB, energy meter etc., are to be provided by the contractor.
- Necessary earthing along with earth pit required as per the standards are to be provided by the contractor.

The relevant Indian standards are to be followed for all works. The entire scope of work is with the contractor and BHEL will not provide any material, manpower etc. for the satisfactory completion of work. The decision of the Engineer-in-charge is final and binding.

The contractor should note while quoting the tender, there may be minor variations in the scope/quantity extra and it is to be taken care while execution for total completion

2. FENCING & LIGHTING

- Fencing of approx 150 Running mtrs with GI barbed wires and angle struts of ht. 1.8 mts is to be provided with suitable grouting in concrete blocks as per the instructions of the engineer I/C.
- Lighting of all covered and open area including earthing as per the requirement and statutory provisions.

3. ROADS AND DRAINS

- Office area shall have a 6m wide and approx 150 m (as per requirement) long 100MM thick PCC road including preparation of subgrade and 100 mm WBM for free and safe movement of vehicles in storage area.
- The area shall also have adequate drainage to avoid accumulation of water in storage area and on the roads.

4. PREAMBLE TO BILL OF QUANTITIES FOR ELECTRICAL WORKS

- The contractor shall prepare the layout/location of the electrical installation and get approval of the same.
 - a. Samples of all the fixtures to be submitted to the BHEL engineer for approval before supply and installation of the same.
 - b. Necessary civil works/base/foundations to be included for installation of fixtures shall be in the quoted rates.
 - c. All light fixtures shall be supplied with lamps.
 - d. Installation work shall be complete with testing and commissioning of the same.
 - e. All fluorescent tube light fixtures shall be complete with control gear and power factor correction capacitors.
 - f. Necessary down rods, hanging or fixing arrangement etc. shall be part of the fixtures.

5. REGULATION & STANDARDS:

- The installation shall comply with the following acts/rules/specifications amended upto date :
 - a. Indian Electricity Act
 - b. Indian Electricity Rules
 - c. Code of Practice for Electrical wiring Installation IS 732 of 1963 amended upto date.
 - d. CPWD Specifications for internal electrification.
 - e. The work shall also conform to any special requirement of Local Electricity Department
 - f. The necessary Fire Regulations as per latest National Code Book
 - g. Wherever the specifications given herein call for higher standards of material/workmanship, then these shall take precedence over (a) to (e) stated above.
 - h. The general layout of wiring points, switches and plug points shall be as per approved drawings. The exact location of points, fittings and fixtures may be altered to suit site requirements and the contractor shall have no claim for extra on this account.

6. **SYSTEM/DETAILS OF WIRING:**

- *Wiring shall be with FRPVC insulated, stranded copper M.S conduits above the false ceiling/recessed/ on wall (conduits to be got approved from BHEL Engineers).*
- *Minimum size of PVC conduits for electrical wiring shall be 19 mm dia. and the wiring should run in separate conduits and PVC channels of suitable size as per applicable standard.*
- *Number of points in each light circuit and power circuit shall be as per approved drawings.*
- *Size of Cable shall be as under:*
 - i. *1.5 sq. mm FRPVC insulated stranded conductor cable of 1100 volts grade ISI marked for light circuits and light points and 5 Amps. Plug sockets.*
 - ii. *6 sq. mm FRPVC insulated stranded copper conductor cable of 1100 volts grade ISI marked for AC / 20 Amps power points.*

iii. All sub-mains shall be as per approved drawings.

iv. FRPVC insulated single core stranded copper conductor cables of 1100 volts graded ISI marked for sub-main.

v. Live wire shall only be tapped from the controlling switch and neutral outlet. Tap off joints in the pull boxes/draw boxes will not be permitted.

- *For each 20Amps power point outlets one 6 pin (6A/20A) switch socket controlled by 20 Amps switch shall be provided.*
- *On one of the switch plates of all the rooms in each dwelling unit, one indicator lamp shall be provided. This shall be preferably the switch plate near the entrance door to the particular room.*
- *The circuit wiring for points shall be carried out in looping in system and no joint shall be allowed in the length of the conductors.*
- *Circuit wiring shall be laid separate conduit originating from distribution board to switch board for light/fan.*
- *A light/fan switchboard may have more than one circuit but shall have to be of same phase.*
- *Looping circuit wiring shall be drawn in same conduit as for point to point or in light/fan switch boards.*
- *A separate earth wire shall be used for point wiring.*
- *Colour coded wire shall be used for phase and black colour wire for neutral.*
- *Circuit wiring shall be carried out with red, yellow or blue colour PVC insulated wire for RYB phase wire respectively and black colour PVC insulated wire for the the neutral wires.*
- *Bare or insulated green colour copper wire shall be used as earth continuity conductor and shall be drawn along with other wires.*

Care shall be taken in pulling the wires so that no damage occurs to the insulation of the wire. Before the wires are drawn into the conduit, the conduits shall be thoroughly cleaned of dust and dirt. Drawing & jointing of copper conductor wires & cables shall be as per CPWD Specifications.

7. DISTRIBUTION BOARDS

- Distribution Boards shall be wall-mounted cubicle type and shall be fixed on the walls in an approved manner as directed by the BHEL engineer.
- The D.Bs shall conform to protection clause IP-42 and be dust and vermin proof.
- The distribution boards with enclosures, bus bars, neutral links and earth links shall be of original manufacturer's only.
- They will be of double door construction with hinged 'doors. Distribution board shall be located

8. EARTHING

- There shall be 2 Nos. Earth pit for total system.
- The earth pit shall be of pipe Earth Electrode type using GI pipe of minimum 100mm dia.
- Both the electrodes to be connected to each other with 21 X 5 mm thick GI strip or 25 mm GI pipe.
- The minimum distance of electrodes should be 3 mtrs.
- The pit shall be filled with required salt & charcoal.

9. EARTH WIRE

- The earthing connection to be taken from two risers of earthing grid through two GI flats.
- From D B to power socket & switch board to be provided by suitable size PVC insulated green colour Cu conductor to be laid along with the wiring.
- Outdoor earthing for Flood lighting (Halogen lamp) to be provided with fittings with 8Swg. GI wire along with cable.

10. G.I. SHEET BOXES

- GI sheet boxes of 2mm thick 14 gauge will be used (CI box will not be used) for all sizes.

11. MATERIALS

- All materials for fittings accessories etc. to be incorporated in this work shall be ISI marked as per the approval of BHEL, and if Indian standards have not been issued then it shall be as per the approval of BHEL.

12. SWITCHES

- All 5 and 20 Amp switches shall be fire retardant polycarbonate plastic modular plate type.
- All 5 Amp. Socket shall be 5 pin type.
- All 20 Amp socket shall be 6 pin type suitable for 20/5Amp.
- All switches, sockets, controlling the lights or fans shall be connected to the phase wire of the circuit.
- Switches shall be located at 900 mm above finished floor level or as directed by BHEL engineer.

13. WALL SOCKET PLATE

- All 5 and 20Amp socket outlet shall be 5 and 6 pin respectively.
- Each outlet shall have a switch located beside the socket.
- The earth terminal of the socket shall be connected to the earth wire.

14. JOINTS

- All joints shall be made at main switches, distribution board socket and switch boxes only. No joints shall be made in conduits & junction boxes.
- Conductors shall be continuous from outlet to outlet.

15. MAIN AND SUBMAINS

- Mains and Sub main cable where called for shall be of the rated capacity and approved make.
- Every main and sub main shall be drawn into an independent adequate size conduit.
- Adequate size draw boxes shall be provided at convenient locations to facilitate easy drawings of the sub main & main cables.
- Independent earth wire of proper rating shall be provided for every sub- main.
- Three phase sub main shall be provided with two earth wire.

Where mains and sub mains cables are connected to the switchgear, sufficient extra lengths of sub main and mains cable shall be provided to facilitate easy connections and maintenance for termination of cables, during crimping type cable socket/lugs shall be provided. Same colour code as for circuit wiring shall be followed.

16. LOAD BALANCING

- Balancing of circuits in three phase installation shall be planned before the commencement of wiring and shall be strictly adhered to

17. COLOUR CODE FOR CIRCUIT & SUBMAIN WIRING

- Colour code for circuit & submain wiring installation shall be Red, Yellow, Blue for three phased Black for neutral and yellow/green or green only for earth in case of insulated earth wire.

18. LIGHTING FIXTURE AND FANS

- The contractor shall supply and install lighting fixtures including but not limited to lamps, ballasts, accessories fixing hardware necessary for installations as may be required.
- All fixtures shall be delivered to the site complete with suspension accessories, canopies, hickey, casing, sockets, holders, reflectors, ballasts, diffusing material, louvers, plaster frames, recessing boxes, etc. all wired and assembled.
- Fixtures, housing, frame or canopy, shall provide a suitable cover for fixture outlet box or fixture opening.

- Fixtures shall comply with all applicable requirements as herein outlined unless otherwise specified or shown on the drawings.
- Fixtures shall bear manufacturer's name and the factory inspection label.
- Fixtures shall be completely wired and constructed to comply with the IEE wiring regulations requirements for lighting fixtures, unless otherwise specified.
- Re clamping the fixture shall be possible without having to remove the fixture from its place.
- Lamps of the proper type, wattage and voltage rating shall be furnished and installed in each fixture.
- Fluorescent fixtures shall be wired with not smaller than 1.5 sq.mm PVC covered wire. No splice or tap shall be located within an arm, stem or chain.
- Wire shall be continuous from splice in outlet box of the building wiring system to lamp socket or to ballast terminals.
- Wiring within incandescent fixtures and for connection to the branch circuit wiring up to the outlet box of lighting point shall not be less than 1.5 sq.mm PVC insulated wire.

19. FIXTURE SAMPLES

- Detailed catalogue for all fixtures or if so required by the BHEL sample fixtures shall be submitted for prior approval of BHEL before orders for the fixtures are placed.

20. Wall mounting FANS

- Contractor to ensure that provision are kept at appropriate locations as directed by the BHEL engineer.

21. MOULDED SWITCH & SOCKETS:

- Modular type plug and sockets as approved shall be used. Panel mounted type controlled by DP/4P MCB depending upon single phase/three phase supply and have insulated extended earthing terminal and degree protection IP-56.

[C] APPROVED MAKE OF MATERIALS

1.	REINFORCEMENT STEEL, GS SHEETS :	SAIL,JINDAL,TATA
2.	ENAMEL PAINTS :	JOHNSON & NICHOLSON BERGER ICI ASIAN PAINT NEROLAC
3.	OIL BOUND DISTEMPERS :	ASIAN JOHNSON & NICKOLSON BERGER ICI
4.	FLUSH DOORS :	KUTTI DURO MYSORE KITPLY CENTURY GREEN PLY
5.	MIRROR/GLASS :	ATUL MODI PILKINTON SAINT GOBAIN
6.	HARDWARES :	GODREJ ARAL BEHARI DORSET SIO VASUNDHARA
7.	GYPSUM CEILING :	INDIA GYPSUM LAFARGE
8.	ALUMINIUM SECTIONS :	HINDALCO INDALCO JINDAL
9	LOCKS & HANDLES :	GODREJ DORSET SIO VASUNDHARA
10	SOIL WASTE PIPE RAIN WATER :	SRIF, RIFCO, RIF
11	GI & MS PIPES :	SURYA,

PRAKASH
JINDAL-HISSAR
TATA

12	GI FITTINGS (MALLEABLE)	:	UNIK, KS, ZOLOTO
13	BALL VALVES (Upto 50 mm dia)	:	ZOLOTO AM, RBB, ITALY, AUDCO
14	GUN METAL/BRASS VALVES	:	ZOLOTO, LEADER, SANT
15	STONEWARE PIPES & GULLY TRAPS	:	PERFECT, ANAND
16	CAST IRON S/S PIPES AND FITTINGS	:	ELECTRO STEEL, KESORAM
17	EUROPEAN TYPE WC WITH SHELL & LID, SEAT COVER ALL COMPLETE		
(a)	FLOOR MOUNTED	:	HINDWARE-20024/ EQUIVALENT MODEL CERA, PARRY
18	INDIAN WC ORISSA TYPE:		
(a)	ORISSA PAN 580X440 MM		HINDWARE-20004/ CERA, PARRY
19	WASH BASIN:		
(a)	OVAL WASH BASIN SIZE 500X400 MM	:	HINDWARE-10012,PARRY
(b)	ROUND WASH BASIN SIZE 490 MM DIA UNDER COUNTER	:	HINDWARE-10052,PARRY
20.	URINAL FLAT BACK SMALL	:	HINDWARE-60001,PARRY

21. WC, PVC SEAT COVER & LID : COMMANDER
PARRYWARE
HINDWARE
- PVC TANK : SINTEX
22. LT CABLES:
- SINGLE CORE COPPER CONDUCTOR
1100 V GRADE PVC/FRLS
CABLES (STANDARD/FLEXIBLE):
- a) PVC INSULATED WIRES : FINOLEX/ BATRA HENLAY/
RALLISON/POLYCAB
- b) FRLS INSULATED WIRES : FINOLEX/ BATRA HENLAY/
RALLISON/POLYCAB
- c) ARMOURED LT CABLES : NICCO/ BATRA HENLAY/ RALLISON/
PVCAA-IS-1554 (PART-I) POLYCAB
XLPE-IS-7098 (PART-I)
23. ELECTRICAL ACCESSORIES
- a) SWITCHES AND SOCKETS: ANCHOR, MK, LK
(MODULAR TYPE SWITCHES)
24. ELECTRICAL EQUIPMENT:
- a) EXHAUST FANS : ALSTOM / CROMPTON/ GC/ Nutech
- b) LIGHT FITTINGS : CROMPTON/PHILIPS /WIPRO.
- c) WALL MOUNTING FANS : ORIENT/ CROMPTON/ GC/Almonard/USHA
- d) CFL & FL LAMPS : PHILIPS/ OSRAM/WIPRO
- e) KWH METERS ETC : BHEL/ GE/ L&T /HAVELS
- f) MCBs & MCB DBs (10 KA) : MDS/ L&T-HAGGER/ HPL/ HAVELS EURO
- g) EARTH LEAKAGE CIRCUIT: MDS/ L&T-HAGGER/ HPL/ HAVELS EURO
BREAKER

Note: Approval of BHEL engineer is to be obtained before procurement of materials specified above. The make of material mention if not available in the market or is not suiting the site condition & the make of material not mentioned in the above list, equivalent make may be used after the approval from BHEL engineer.

ANNEXURE-IV

**CERTIFICATE OF DECLARATION FOR CONFIRMING THE KNOWLEDGE
OF SITE CONDITIONS**

We,.....
... Hereby declare and confirm that we have visited the project site under the
subject namely,and acquired full
knowledge and information about the site conditions, wage structure, Industrial
climate and total work involved. We further confirm that the above information
is true and correct and we will not raise any claim of any nature due to lack of
knowledge of site condition.

and Address. Tenderer's Name

Place (Signature of the Tenderer's With stamp)

Date:

ANNEXURE-V

**NON DISCLOSURE AGREEMENT
Memorandum of Understanding**

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

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

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

(
M/s. BHEL, PSNR

(
M/s.....