

TENDER NO: PSER:SCT:SAL-C2078:20

VOLUME -IF

TECHNICAL CONDITIONS OF CONTRACT
(TCC)

FOR

**CIVIL WORK FOR INSTALLATION OF DCFS ABSORBER OVER EXISTING PILE CAP
AND ASSOCIATED CIVIL WORKS AT 3X250 MW BONGAIGAON TPP, SALAKATI,
ASSAM.**

BHARAT HEAVY ELECTRICALS LIMITED

(A GOVT. OF INDIA UNDERTAKING)

POWER SECTOR – EASTERN REGION

PLOT NO. – 9 / 1, DJ – BLOCK,

SECTOR – II, KARUNAMOYEE,

SALT LAKE CITY,

KOLKATA – 700091.

TENDER NO: PSER:SCT:SAL-C2078:20

VOLUME -IF

TECHNICAL SPECIFICATION
(TS)

FOR

**CIVIL WORK FOR INSTALLATION OF DCFS ABSORBER OVER EXISTING PILE CAP
AND ASSOCIATED CIVIL WORKS AT 3X250 MW BONGAIGAON TPP, SALAKATI,
ASSAM.**

BHARAT HEAVY ELECTRICALS LIMITED

(A GOVT. OF INDIA UNDERTAKING)

POWER SECTOR – EASTERN REGION

PLOT NO. – 9 / 1, DJ – BLOCK,

SECTOR – II, KARUNAMOYEE,

SALT LAKE CITY,

KOLKATA – 700091.

| | | |
|-----------------------------------|---|--------------|
| TENDER NO – PSER:SCT:SAL-C2078:20 | | |
| VOLUME-IF-CML-REV-00 | TECHNICAL CONDITIONS OF CONTRACT (TCC) | PAGE 1 OF 30 |

CONTENT

| CLAUSE NO | DESCRIPTION |
|-----------|--|
| 1.0 | PROJECT SYNOPSIS AND GENERAL INFORMATION |
| 2.0 | SITE VISIT |
| 3.0 | SCOPE OF WORK |
| 4.0 | DEVIATIONS/CLARIFICATIONS |
| 5.0 | DEWATERING |
| 6.0 | LAND |
| 7.0 | WATER |
| 8.0 | ELECTRICITY |
| 9.0 | CONSUMABLE |
| 10.0 | TEST CERTIFICATES |
| 11.0 | IMTE |
| 12.0 | QUALITY CONTROL & QUALITY ASSURANCE |
| 13.0 | QUALITY ASSURANCE PROGRAMME |
| 14.0 | REQUIRMENT OF ISO: 9001 |
| 15.0 | MMEs / MMRs |
| 16.0 | WORK AND SAFETY REGULATIONS |
| 17.0 | PROJECT MANAGEMENT/ CONSTRUCTION MANAGEMENT |
| 18.0 | TEST CERTIFICATE FOR T&P |
| 19.0 | T&P TO BE PROVIDED BY BHEL |
| 20.0 | MATERIAL HANDLING (BHEL ISSUED MATERIAL) |
| 21.0 | RETURN OF MATERIALS |
| 22.0 | CEMENT |
| 23.0 | REINFORMCEMENT STEEL |
| 24.0 | PROCUREMENT OF FASTNERS, SEMIS, DECK SHEETS, ETC |
| 25.0 | CONSTRUCTION OF TEMPORARY OFFICE, STORES ETC |
| 26.0 | TOOLS & PLANTS (TO BE PROVIDED BY CONTRACTOR) |
| 27.0 | CIVIL LABORATORY |
| 28.0 | CONSTRUCTION SCHEDULE |
| 29.0 | COMPLETION PERIOD |
| 30.0 | CERTIFICATE TOWARDS COMPLETION |
| 31.0 | EXTENSION OF TIME FOR COMPLETION |
| 32.0 | MOBILIZATION ADVANCE/ INTEREST BEARING RECOVERABLE ADVANCE |
| 33.0 | SECURITY DEPOSIT & PERFORMANCE BOND |
| 34.0 | REVISION ON ACCEPTED CONTRACT RATE |
| 35.0 | LIQUIDATED DAMAGE/PENALTY |
| 36.0 | CONTRACT PRICE |
| 37.0 | TAXES AND DUTIES |
| 38.0 | INTERIM PAYMENTS |
| 39.0 | PRICE VARIATION CLAUSE |
| 40.0 | OVER RUN CHARGES |
| 41.0 | METHOD OF MEASUREMENT |
| 42.0 | EXTRA/ ADDITIONAL ITEMS OF WORK |
| 43.0 | INSURANCE |
| 44.0 | GARANTEE |
| 45.0 | IDLE CHARGES |
| 46.0 | OTHER TERMS |
| | ANNEXURE A |

| TENDER NO – PSER:SCT:SAL-C2078:20 | | |
|-----------------------------------|---|--------------|
| VOLUME-IF-CML-REV-00 | TECHNICAL CONDITIONS OF CONTRACT (TCC) | PAGE 2 OF 30 |

The conditions mentioned hereunder shall be read along with other volumes of tender, i.e. general conditions of contract (GCC, Volume-IB), Volume-III etc.

| CLAUSE NO | DESCRIPTION |
|-----------|---|
| 1.0 | <p>PROJECT SYNOPSIS AND GENERAL INFORMATION</p> <p>NTPC is setting up three units of 3X250 MW Thermal Power Station (coal based) at Bongaigaon, District-Kokrajhar, and State of Assam.</p> <p>The Plat site is located near Kumguri, Salakati in Kokrajhar district of Assam. The nearest major town Bongaigaon is located at a distance of about 20 Kms. from Project site.</p> <p>Nearest Railway Station: Salakati Railway Station. (Approx. 4.0 kms. from the Plant)</p> <p>Nearest Commercial Airport: GUWAHATI (Approx. 220 kms. from the Plant)</p> <p>Kokrajhar is district town located around 14 kms. away from the project site. And Bongaigaon is around 35 kms away from the Project.</p> |
| 2.0 | <p>SITE VISIT</p> <p>The bidder must visit the actual site of 3 x 250 MW Bongaigaon Thermal Power Project, to acquire full knowledge and information about the conditions prevailing at site as well as, in and around the project site, together with the statutory, obligatory, mandatory requirements of various authorities before submission of the bid.</p> |
| 3.0 | <p>SCOPE OF WORK</p> |
| 3.1 | <p>The scope of work covers all the Additional Civil & Structural Works for Installation of DCFS Absorber over existing pile cap for FGD system of 3x250 MW Bongaigaon TPP/NTPC, including supply of all materials as specified in the tender specification / BOQ- cum- Rate Schedule, labour, tools and plants etc. as required for completion of the job. The scope of work is indicative but not limited to the given below:</p> <p>Scope of work:</p> <ul style="list-style-type: none"> • Pile Foundations • Misc. Tank Foundations • Misc. Pump & Equipment Foundations • Suspended Slab. • Brick work. • Other Additional / Modification work, etc. <p>During execution, BHEL reserves the right to include or exclude in the scope of work, civil and structural job of various aux. building other than those indicated above, specially pertaining to the new DCFS system, depending on final layout, approach, execution convenience etc. and to minimize execution interface problem. The work shall be executed as per applicable relevant item of BOQ-cum-Rate schedule.</p> |
| 3.2 | <p>Mix design (M 15, M 20, M 25, M 30) for all concreting shall be carried out from a reputed institute, contractor has to ensure with or without adding of admixture and minimizing of cement content in line with IS 456 as advised by BHEL time to time without any additional cost.</p> |
| 3.3 | <p>Contractor shall provide temporary barricade all round the working area to avoid any untoward incident.</p> |
| 3.4 | <p>The work to be performed under this specification consists of providing all labour, materials, consumables, equipment, temporary works, temporary storage sheds for contractors own use, temporary colony for labour and staff, temporary site offices, constructional plant's transportation / handling and all incidental items not shown or specified but reasonably implied or necessary for the completion of subject scope, all in strict accordance with the specifications including revisions and amendments thereto as may be required during the execution of work.</p> |
| 3.5 | <p>The scope shall also include setting up by the bidder a testing laboratory (one AC lab size 4.5mtr x 6mtr and 1 non AC lab 4.5 mtr x 4.5 mtr.) in the field to carry out all relevant tests. Detail of laboratory equipments as per Annexure-A is to be arranged by the contractor within quoted rate. For conducting day to day test, one Qualified quality engineer to be deployed as necessary.</p> |

| TENDER NO – PSER:SCT:SAL-C2078:20 | | |
|-----------------------------------|---|--------------|
| VOLUME-IF-CML-REV-00 | TECHNICAL CONDITIONS OF CONTRACT (TCC) | PAGE 3 OF 30 |

| | |
|------------|---|
| 3.6 | All quality standards, tolerances, welding standards & other technical requirements shall be strictly adhered to. The Bidder shall fully apprise himself of the prevailing conditions at the proposed site, climatic conditions including monsoon pattern, soil conditions, local conditions and site specific parameters and shall include for all such conditions and contingent measures in the bid, including those which may not have been specifically brought out in the specifications. |
| 3.7 | All works under this specification, unless specified otherwise, shall conform to the latest revision of Indian Standard Specifications and Codes of Practice. In case any particular aspect of work is not covered specifically by Indian Standard Specification, any other standard practice as may be specified by the Engineer shall be followed. |
| 3.8 | The Contractor is to carry out the work as per the drawings issued to him and / or Contractor's drawings which are approved by the Engineer and / or the Engineer's instructions. Drawing showing enough details for the construction as per the specification shall be furnished to the contractor in a phased manner as far as possible. |
| 3.9 | The contractor shall comply with all state and central laws, various labour laws, statutory rules and regulations, etc. |
| 3.10 | The payment of wages act, minimum wages act, workman compensation act, Employers Liability act, Industrial Dispute Act, Employees Provident Fund Scheme, Employees State Insurance, Contract Labour (Regulation and abolition) Act and other acts, rules & regulation for labour as may be enacted by the Government during the tenure of the contract and having force or jurisdiction at site. The contractor shall give to the local government body police and other relevant authorities all such notices as may be required by law. |
| 3.11 | The contractor shall comply with all the rules and regulations of the local authorities, all statutory laws including minimum wages, workmen compensation etc. All registration and statutory inspection fees, if any, in respect of the work executed by the contractor shall be to his account. |
| 3.12 | Contractor's engineer & supervisors shall be adequately qualified and also inclined to do a quality job. |
| 3.13 | BHEL will not provide any T&P / instruments / consumables to the party. The work under the scope of the contractor will be deemed to be completed, in all respects, only when so certified by BHEL. |
| 3.14 | SPLITTING BHEL reserves the right to split the work and award any part of the work to any agency without assigning any reasons whatsoever. |
| 4.0 | DEVIATIONS / CLARIFICATIONS |
| 4.1 | The bidder is required to submit his offer in the relevant schedule / format without any ambiguity. Any assumptions, presumptions, deviations etc. indicated or implied anywhere by the bidder except those indicated in the deviation schedule / format will not be recognized and will not form a part of consideration / offer. In the absence of such filled-up schedule / format it will be understood and agreed that the bidder's offer is based on strict conformance to the specification and no negotiation would be allowed in this regard. BHEL reserve the right not to recognize any / all deviations submitted after opening of the bid. |
| 4.2 | Bidders will have to submit "no deviation certificate" as per enclosed format. Bidders may please note that, in case of any deviation taken by the bidder from the tender terms, bids are likely to be rejected. Bidders are also required to fill all annexures of tender. |
| 5.0 | DEWATERING Contractor shall ensure at all times that his work area & approach / access roads are free from accumulation of water, so that the materials are safe and the erection / progress schedule are not affected. No separate claim in this regard shall be admitted by BHEL. No separate payments for dewatering of subsoil, surface water or catchments water, if required, at any time during execution of the work including monsoon period shall be considered by BHEL. |
| 6.0 | LAND |
| 6.1 | Only limited land can be provided free of cost for construction of temporary office, stores, fabrication area etc. within the project premises. |
| 6.2 | The contractor has to plan and use the existing land inside the Project Premise considering the use of land by other Civil / Mechanical / Electrical contractors and the storage of plant machineries and materials. The existing land shall be shared by all erections agencies. Land will be allocated with certain time frame and to the extent available / considered necessary, and will be reviewed by BHEL depending upon the area availability. |

| TENDER NO – PSER:SCT:SAL-C2078:20 | | |
|-----------------------------------|---|--------------|
| VOLUME-IF-CML-REV-00 | TECHNICAL CONDITIONS OF CONTRACT (TCC) | PAGE 4 OF 30 |

| | |
|-----|---|
| 6.3 | <p>Land can not be provided for Labour Colony inside / outside the project premises to the contractor to construct labour colony/hutment. The bidder must visit the plant & surrounding areas to assess the situation. However, if land is made available by customer NTPC at later date, same shall be provided to the contractor.</p> <p>The contractor shall construct labour colony / hutment as per his requirements after obtaining approval of formalities from statutory body. Further, contractor must ensure minimum HSE norms and hygienic sanitary conditions in his labour colony.</p> |
| 6.4 | The Contractor shall have total responsibility for all equipment and materials in his custody stores, loose, semi-assembled and / or erected by him at Site. The Contractor shall make suitable security arrangements including employment of security personnel to ensure the protection of all materials, equipment and works from theft, fire, pilferage and any other damages and loss. All materials of the Contractor shall enter and leave the Employer Site only with the written permission of the Employer in the prescribed manner. |
| 6.5 | The contractor will be responsible for handing back all lands, as handed over to him by BHEL / NTPC. |
| 6.6 | Area within plant premises for batching plant, office, storage area etc. for construction purpose shall be provided as per availability free of cost as per approval of customer. |
| 7.0 | WATER |
| 7.1 | Construction water & drinking water shall be arranged by successful bidder. |
| 7.2 | Contractor should arrange on their own, drinking water in their labour colony outside the plant premises. |
| 7.3 | BHEL shall not be responsible for any inconvenience or delay caused due to any interruption of water supply and the contractor shall claim no compensation for delay in work for such interruption. Contractor may make standby arrangement for water for which no separate payment shall be made by BHEL. |
| 7.4 | Contractor will have to arrange for storage of water to meet the day-to-day requirement. Bidder will ensure adequate supply of construction water to meet the requirement of water during major concreting. |
| 7.5 | The availability of water (construction as well as drinking) in Bongaigaon project may be limited. Contractor shall ensure that no water is wasted. In this regard the contractor shall take all necessary measure towards preservation waste of water. |
| 8.0 | ELECTRICITY |
| 8.1 | <p>CONSTRUCTION POWER & GENERAL ILLUMINATION NETWORK:</p> <p>BHEL Shall Provide Construction Power free of charge at 415V level at single point (within 500 M from his work place), bidder has to make his own distribution arrangement to draw electricity.</p> <p>GENERAL:</p> <p>If any other voltage level (other than normally available) is required, the same shall be arranged by the contractor from power supply as above. Contractor will have to provide at his own cost necessary calibrated energy meters (tamper proof, suitably housed in a weather proof box with lock & key arrangement) at point of power supply along with calibration certificate from authorized / accredited agency for working out the power consumption. In case of recalibration required for any reason the necessary charges including replacement by calibrated meters is to be borne by the contractor. Supply of electricity shall be governed by Indian Electricity Act and Installation Rules and other Rules and Regulation as applicable. The contractor shall ensure usage of electricity in an efficient manner and the same may be audited by BHEL time to time. In case of any major deviation from normally accepted norms is observed, BHEL will reserve the right to impose penalty as deemed fit for such cases.</p> |
| 8.2 | The bidder shall have to provide earth leakage circuit breaker at each point wherever human operated electrical drives / T&Ps are deployed. |
| 8.3 | The power supply will be from the available grid. BHEL shall not be responsible for any inconvenience or delay caused due to any interruption of power supply / variation in voltage level and no compensation for delay in work can be claimed by the contractor due to such non-supply on the grounds of idle labour, machinery or any other grounds. |
| 8.4 | Bidder will have to arrange sufficient illumination at their own work areas. |
| 8.5 | The contractor should ensure that the work in critical areas is not held up in the event of power breakdown. In the event of breakdown in the electric supply, if the progress of work is hampered, it will be the responsibility of the contractor to step up the progress of work after restoration of electric supply so that overall progress of work is not affected. |
| 8.6 | The contractor shall have to make arrangement at their own cost for illumination that will be required in the working area for execution of the work & safety of workmen. |
| 8.7 | Contractor shall make arrangement of electricity of their own for labour colony. |

| TENDER NO – PSER:SCT:SAL-C2078:20 | | |
|-----------------------------------|---|--------------|
| VOLUME-IF-CML-REV-00 | TECHNICAL CONDITIONS OF CONTRACT (TCC) | PAGE 5 OF 30 |

| | |
|-------------|---|
| 9.0 | CONSUMABLE |
| 9.1 | All consumables, like gas, electrodes, chemicals, lubricants etc. required for the scope of work, shall be arranged by the contractor at his cost from approved brand / make unless otherwise specifically mentioned in the contract. All consumables to be used for the job shall have to be approved by NTPC / BHEL prior to use. |
| 9.2 | In the event of failure of contractor to bring necessary and sufficient consumables, BHEL may arrange for the same at the risk and cost of the contractor. The entire cost towards this along-with overhead shall be paid by the contractor or deducted from the contractor's bills. |
| 10.0 | TEST CERTIFICATES |
| | Necessary test certificates of all materials supplied by contractor are to be produced to BHEL prior to use of those materials. |
| 11.0 | IMTE |
| | The contractor shall ensure deployment of reliable and calibrated instrument, measuring, and test Equipment (IMTE). The IMTE shall have test calibration certificate from authorized / Govt approved agencies. The contractor shall also keep provision of alternate engagement for such IMTE so that the work does not suffer when a particular IMTE is sent for calibration. Re-testing / re-calibration shall also be arranged by the contractor at their own cost at regular interval during the period of use as advised by BHEL. |
| 12.0 | QUALITY CONTROL & QUALITY ASSURANCE |
| 12.1 | INSPECTION & FIELD QUALITY ASSURANCE |
| 12.1.1 | Contractor shall carry out all activities conforming to the approved Field Quality Plan (FQP) & technical instructions as revised from time to time. 'Total Quality' shall be the watchword of the work and contractor shall strive to achieve the quality standards, procedures laid down by BHEL. He shall follow all the instructions as per BHEL drawings and quality standards. Contractor shall provide the services of quality assurance engineer as per the relevant clauses. |
| 12.1.2 | Preparation of quality assurance log sheets and protocols with customer / consultants / statutory authority, welding logs, NDE records, testing & calibration records and other quality control and quality assurance documentation as per BHEL engineer's instructions, is within the scope of work / specification. These records shall be submitted to BHEL / customer for approval from time to time. |
| 12.1.3 | The protocols between contractor and customer / BHEL shall be made for correctness of foundations, materials, procedures, at each stage of installation, generally as per the requirement of customer / BHEL. This is necessary to ensure elimination of errors and to avoid accumulation and multiplication of errors. |
| 12.1.4 | A daily log book (with proper indexing) should be maintained by every supervisor / engineer of contractor, for respective area of work, on the job for detailing and incorporating alignment/ clearance / centering / levelling readings and inspection details of various equipment, etc. This log book shall be always accessible to BHEL engineers. High pressure welding (as applicable under the scope of this contract) details like serial number of weld joints, welders name, date of welding, details of repair, heat treatment etc. will be documented in welding log as per BHEL Engineer's instructions. Record of radiography (as applicable under the scope of this contract) containing details like serial number of weld joints, date of radiography, repairs, if any, re-shots etc shall also be maintained as per BHEL Engineer's instructions. Record of heat treatments (as applicable under the scope of this contract) performed shall be maintained as prescribed by BHEL. |
| 12.1.5 | The performance of welders (as applicable under the scope of this contract) will be reviewed from time to time as per the BHEL standards. Welders' performance record shall be furnished periodically for scrutiny of BHEL's Engineer. Corrective action as informed by BHEL shall be taken in respect of those welders not conforming to these standards. This may include removal/ discontinuance of concerned welder(s). Contractor shall arrange for the alternate welders immediately. |
| 12.1.6 | Only welders duly authorized by BHEL / customer / consultant after welder qualification test as per ASME Sec-Ix / AWS D1.1 (as applicable) shall be engaged on the work. All the welders shall carry identity cards as per the proforma prescribed by BHEL / Customer / Consultant. |
| 12.1.7 | Any re-laying or re-termination of cables / re-erection of instruments / recalibration of instruments etc. required due to contractor's mistake and found at any stage inspection shall be carried out by the contractor at no extra cost. Repair / rectification procedure to be adopted to make any job acceptable shall be subject to the approval of BHEL. |
| 12.1.8 | Weekly Quality Review Meeting at site shall be organised by BHEL to discuss quality issues and next weeks inspection plans. Site in-charge of the contractor along with QAEs of the contractor must be present in the meeting with closure report of the issues raised by BHEL in the previous meetings. |

| TENDER NO – PSER:SCT:SAL-C2078:20 | | |
|-----------------------------------|---|--------------|
| VOLUME-IF-CML-REV-00 | TECHNICAL CONDITIONS OF CONTRACT (TCC) | PAGE 6 OF 30 |

| | |
|--------|--|
| 12.2 | REQUIREMENT OF ISO 9001 |
| 12.2.1 | BHEL: PSER is accredited with ISO 9001 certification and as such this work is subject to various audits to meet ISO 9001 requirements. |
| 12.2.2 | <p>The basic philosophy of the Quality Management System under ISO 9001 is to define the organizational responsibility, work as per documented procedures, verify the output with respect to acceptance norms, identify the non-conforming product / procedure and take corrective action for removal of non-conformance specifying the steps for avoiding recurrence of such non-conformities, & maintain the relevant quality records. The non-conformities are to be identified through the conduct of periodical audit of implementation of quality systems at various locations/stages of work. Suppliers / vendors of various products / services contributing in the work are also considered as part of the quality management system.</p> <p>As such the contractor is expected not only to conform to the quality management system of BHEL but also it is desirable that they themselves are accredited under any quality management system standard.</p> |
| 12.2.3 | BHEL reserves the right to carry out quarterly quality audits and quality surveillance of the systems and procedures of contractor's quality management. Contractor shall provide all necessary assistance to enable BHEL to carry out such audit & surveillance. |
| 12.2.4 | Quality audits / approval of the results of test & inspection will not prejudice the right of BHEL to reject an equipment service not giving desired performance and shall not in no way limit the liabilities and responsibilities of the contractor in earning satisfactory performances of equipment / service as per specification. |
| 12.3 | MMEs / MMRs |
| 12.3.1 | Contractor shall ensure deployment of reliable and calibrated MMEs (Measuring and Monitoring Equipment). The MMEs shall have test / calibration certificates from authorised / Government approved / Accredited agencies traceable to National / International Standards. Re-testing / re-calibration shall also be arranged at regular intervals during the period of use as advised by BHEL Engineer within the contract price. The contractor will also have alternate arrangements for such MMEs so that work does not suffer when the particular equipment / instrument is sent for calibration. Also if any MMEs 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 MME and retake the readings at Contractor's cost. |
| 12.3.2 | Contractor shall provide all the Measuring Monitoring Equipment (MMEs) required for completion of the work satisfactorily. These MMEs shall be of brand, quality and accuracy specified by BHEL Engineer and should have necessary calibration and other certificates as per the requirement of BHEL Engineer. Decision of BHEL Engineer regarding acceptance or otherwise of the measuring instruments / gauges / tools for the work under this specification, is final and binding on the contractor. BHEL shall give an indicative list of MMEs required for this work else where in this contract and to be made available by the contractor. The list will be reviewed by BHEL site as per the requirement of approved FQPs and the contractor shall meet any augmentation needed wherever required. |
| 12.3.3 | It is the responsibility of the contractor to prove the accuracy of the testing / measuring / calibrating equipment brought by him based on the periodicity of calibration as called for in the BHEL's quality assurance standards/BHEL Engineer's instructions. |
| 12.3.4 | Re-work necessitated on account of use of invalid MMEs shall be entirely to the contractor's account. He shall be responsible to take all corrective actions, including resource augmentation if any, as specified by BHEL to make-up for the loss of time. |
| 12.3.5 | In the courses of erection, it may become necessary to carry repeated checks of the work with instruments recently calibrated, re-calibrated. BHEL may counter / finally check the measurements with their own MMEs. Contractor shall render all assistance in conduct of such counter / final measurements. |
| 12.4 | INSPECTION BY TS / FES / QA ENGINEERS OF BHEL UNITS / ENGINEERING CENTRES |
| 12.4.1 | Apart from day-to-day inspection by BHEL Engineers stationed at Site and Customer's Engineers, stage inspection of equipment under erection and commissioning at various stages may also be conducted by teams of Engineers from Field Engineering Services of BHEL's Manufacturing Units, Quality Assurance teams from Field Quality Assurance, Unit/Factory Quality Assurance and Commissioning Engineers from Technical Services etc. Contractor shall arrange all labour, tools and tackles etc along with proper access for such stage inspections free of cost. |
| 12.4.2 | Any modifications suggested by BHEL FES and QA Engineers' team shall be carried out. Claims of contractor, if any, shall be dealt as per applicable clause of the contract, and provided such modifications have not arisen for reasons attributable to the contractor. |

| TENDER NO – PSER:SCT:SAL-C2078:20 | | |
|-----------------------------------|---|--------------|
| VOLUME-IF-CML-REV-00 | TECHNICAL CONDITIONS OF CONTRACT (TCC) | PAGE 7 OF 30 |

| 12.5 | CONFORMANCE TO THE STATUTORY REQUIREMENTS (AS APPLICABLE UNDER THE SCOPE OF THE CONTRACT) SHALL BE IN CONTRACTOR'S SCOPE. | | | |
|--------------------------|--|------------------------------|----------------------------|---|
| 12.6 | STORAGE & PRESERVATION OF WELDING ELECTRODES & OTHER BHEL-ISSUED MATERIAL | | | |
| 12.6.1 | The contractor shall be responsible for storage & preservation of welding electrodes & other BHEL-issued materials as per BHEL Storage & Preservation Guidelines / Instructions. | | | |
| 12.7 | PENALTIES ON VENDORS / SUB-CONTRACTORS AGAINST NON-COMPLIANCE OF QUALITY NORMS | | | |
| Sl. No. | Nature of Non-compliance | Penalty for Domestic Project | Penalty for Export Project | Remarks |
| GENERAL | | | | |
| 12.7.1 | Unavailability of QAE deployment schedule (duly approved by BHEL Site) matching with manpower requirement of approved L2 schedule | 0.10% | 0.10% | Against each RA bill |
| 12.7.2 | Unavailability of required number of QAE with proper experience & NDT certification as per the requirement of the Contract | Rs. 1,000.00 | \$16.00 | Per person per day |
| 12.7.3 | Not attending quality meeting of BHEL by nominated member of vendor / sub-contractor | Rs. 2,000.00 | \$32.00 | Per meeting |
| CALIBRATION | | | | |
| 12.7.4 | Use of MMEs without valid calibration certificate | Rs. 1,000.00 | \$16.00 | Per equipment per instance |
| 12.7.5 | Use of NDT equipment, welding equipment without having valid calibration certificate / condition not as per requirement | Rs. 1,000.00 | \$16.00 | Per equipment per instance |
| WELDING & NDT | | | | |
| 12.7.6 | Unqualified welders carrying out welding / tack welding | Rs. 1,000.00 | \$16.00 | Per welder per instance. (Gatepass of the person shall be withheld) |
| 12.7.7 | Not using portable oven for welding consumables | Rs. 500.00 | \$8.00 | Per welder per instance. (The consumables in the oven shall be confiscated) |
| 12.7.8 | Not using electrodes pre-baked in baking oven | Rs. 500.00 | \$8.00 | Per instance. (The subject consumables shall be confiscated) |
| 12.7.9 | Not using welding consumables of approved make & not using correct type of electrode as per approved EWS / Drawing / WPS | Rs. 1,000.00 | \$16.00 | Per instance. (The subject consumables shall be confiscated) |
| 12.7.10 | Non-removal of welding slag and spatters after welding | Rs. 500.00 | \$8.00 | Per joint |
| 12.7.11 | Not using NDT equipment as prescribed in the manual / FQP / guidelines / Contract | Rs. 1,000.00 | \$16.00 | Per equipment per instance |
| 12.7.12 | Welder doing welding without valid job card | Rs. 500.00 | \$8.00 | Per instance |
| 12.7.13 | Discrepancy observed in the weld joints identified by BHEL / Customer for RT vs RT film offered | Rs. 2,000.00 | \$32.00 | per joint |

| TENDER NO – PSER:SCT:SAL-C2078:20 | | |
|-----------------------------------|---|--------------|
| VOLUME-IF-CML-REV-00 | TECHNICAL CONDITIONS OF CONTRACT (TCC) | PAGE 8 OF 30 |

| | | | | |
|---|--|---------------------------------|---------------------------------|--|
| MATERIAL MANAGEMENT | | | | |
| 12.7.14 | Non-maintenance of grid pillar marking | Rs. 200.00 | \$3.00 | Per location week |
| 12.7.15 | Mismatch of location of material in store area w.r.t. location mentioned in stock register | Rs. 500.00 | \$8.00 | Per instance |
| 12.7.16 | Non-compliance of Preservation of material as per storage & preservation manuals | Rs. 1,000.00 | \$16.00 | Per equipment |
| 12.7.17 | Not offering received material for verification within stipulated time as per contract | Rs. 500.00 | \$8.00 | Per instance |
| PAINTING & ALLIED WORKS | | | | |
| 12.7.18 | Not using primer / paints of approved make and as per Specifications | Rs. 1,000.00 | \$16.00 | Per instance |
| 12.7.19 | Painting without proper surface preparation as per approved schedule / drawing / FQP | Rs. 500.00 | \$8.00 | Per instance |
| PROTOCOLS & LOG SHEETS | | | | |
| 12.7.20 | Delay in preparation of Protocols / Logsheets as per approved FQP within 3 days of completion of checks | Rs. 200.00 | \$3.00 | Per protocol per day delay |
| INSPECTION OF BOUGHT-OUT ITEMS / CONSUMABLES | | | | |
| 12.7.21 | Delay in offering inspection of Bought-out Items / Consumables / Aggregates (for items which need site inspection as per approved QP) within 3 days of receipt of material at site | 1% of the item value of the LOT | 1% of the item value of the LOT | per item per day delay after receipt of material |
| 12.7.22 | Delay in submission of required documents (viz. Invoice, Inspection Release Note, COC, MDCC, MTC as the case may be) of Bought-out Items (shop inspection items / consumables) with in 3 days of receipt of material at site. | 1% of the item value of the LOT | 1% of the item value of the LOT | per item per day delay after receipt of material |
| NOTE: Any non-conformity requiring dismantling / rework, attributable to vendor / sub-contractor, shall be penalised at a rate mentioned above or cost to BHEL, which ever is higher. | | | | |
| 13.0 | QUALITY ASSURANCE PROGRAMME | | QUALITY ASSURANCE PROGRAMME | |
| 13.1 | Deleted | | | |
| 14.0 | REQUIREMENT OF ISO 9001 | | | |
| 14.1 | Deleted | | | |
| 15.0 | MMEs / MMRs | | | |
| 15.1 | Deleted | | | |
| 16.0 | WORK & SAFETY REGULATIONS | | | |
| 16.1 | General | | | |
| 16.1.2 | The contractor shall comply with all the requirements of "The Building and Other Construction Workers (Regulation of Employment & Conditions of Service) Act," 1996 and its Central Rule 1998 / State Rules and any other statutory requirements as applicable. | | | |
| 16.1.3 | The Contractor shall follow NTPC Safety Rules as issued from time to time with respect to safety in construction & erection. | | | |
| 16.1.4 | The contractor shall have the approved Safety, Health and Environment (SHE) Policy in respect of Safety and health of Building Workers and it shall be circulated widely and displayed at conspicuous place in Hindi and local language understood by the majority of the workers. A copy of the safety policy should be submitted to Engineer in charge. | | | |
| 16.1.5 | The contractor shall submit the safety plan comprising of methods to implement the Safety Policy/ Rules, Risk assessment and ensuring Safety at work areas, Safety audits, inspections and its compliance, Supervision and Responsibility to ensure Safety at various levels, Safety training to employees, review of Safety and accident analysis, ensure Health and Safety Procedures to prevent accidents to Engineer I/c for approval as per the format of Safety plan as annexed at Annexure - I. | | | |

| TENDER NO – PSER:SCT:SAL-C2078:20 | | |
|-----------------------------------|---|--------------|
| VOLUME-IF-CML-REV-00 | TECHNICAL CONDITIONS OF CONTRACT (TCC) | PAGE 9 OF 30 |

| | |
|---------|---|
| 16.1.6 | The Contractors shall ensure proper safety of all the workmen, materials, plant and equipment belonging to him or to the Employer or to others, working at the Site. |
| 16.1.7 | All equipments used in construction and erection by the contractor shall meet BIS I International Standards and where such standards do not exist, the Contractor shall ensure these to be absolutely safe. All equipments shall be strictly operated and maintained by the contractor in accordance with manufacturer's operation manual. The contractor should also follow Guidelines/Rules of the Employer in this regard. |
| 16.1.8 | The Contractors shall provide suitable latest Personal Protective Equipments of prescribed standard to all their employees and workmen according to the need. The Engineer I/c shall have the right to examine these safety equipments to determine their suitability, reliability, acceptability and adaptability. The contractor should also ensure these before their use at worksite. |
| 16.1.9 | The Contractor shall provide safe working conditions to all workmen and employees at his workplace including safe means of access, railings, stairs, and ladders, scaffolding, work platforms, toe boards etc. The scaffoldings shall be erected under the control and supervision of an experienced and competent person. For erection of scaffolds, access, work platforms etc. shall be good and the contractor shall use standard quality of material. |
| 16.1.10 | The Contractor shall follow and comply with all the Safety Rules, standards, code of practices of NTPC and relevant provisions of applicable laws pertaining to the safety of workmen, employees, plant and equipment as may be prescribed from time to time without any protest or contest or reservation. In case of any unconformity between statutory requirement and the Safety Rules of the Employer referred above, the latter shall be binding on the Contractor unless the statutory provisions are more stringent. As and when required he can refer / obtain copy of NTPC safety documents as stated above. |
| 16.1.11 | The contractor shall have his own arrangements with nearby hospitals for shifting and treatment of sick and injured. The medical examination of the workers employed in hazardous areas shall be conducted as per Rule 223 Of The Building and Other Construction Worker (Regulation of Employment and Condition of Service) Central Rule 1998 Their health records shall be maintained accordingly and to be submitted to Engineer 1/c when asked for. If any worker found suffering from occupational health hazard, the worker should be shifted to suitable place of working and properly treated under intimation to Engineer I/c. The medical fitness certificate to be submitted to Engineer (I/c). |
| 16.1.12 | First Aid boxes equipped with requisite articles as specified in the Rule 231 of The Building and Other Construction Worker (Regulation of Employment and Condition of Service) Central Rule 1998 shall be provided at construction sites for the use of workers. Training has to be provided on first aid to workmen & office bearers working at site. |
| 16.2 | Emergency Action Plan The contractor shall prepare an emergency action plan approved by his competent authority to handle any emergency occurred during construction work. Regular mock drills shall be organized to practice this emergency plan. The Emergency Action Plan should be widely circulated to all the employees and suitable infrastructure shall be provided to handle the emergencies. |
| 16.3 | Scaffolding The contractor shall take all precautions to prevent any accidental collapse of scaffolding or fall of persons from scaffolding. The contractor should ensure that scaffolding are designed by a competent person and its erection and repairs should be done under the expert supervision. The scaffolding shall meet the required strength and other requirements for the purpose for which the scaffold is erected. The material used for scaffold should conform to the BIS / International standards. |
| 16.4 | Opening The contractor shall ensure that there is no opening in any working platform/any floor of the building, which may cause fall of workers or material. When ever an opening on a platform/any floor of the building is unavoidable, the opening should be suitably fenced and necessary measures for protection against falling objects or building workers from such platform are taken by providing suitable safety nets, safety belts or other similar means. |
| 16.5 | Explosives The contractor shall take all precautions while handling, using, storing or transporting of all explosives. Before usage of any explosive necessary warning / danger signals be erected at conspicuous places to warn the workers and general public. The contractor should strictly ensure that all measures and precautions required to be complied for use, handling, storing or transportation of explosives under the rules framed under the Explosives Act, 1884. |
| 16.6 | Fencing of Machinery The contractor shall provide suitable fencing or guard to all dangerous and moving parts of machinery. The contractor shall not allow any of the employees to clean, lubricate, repair, adjust or examine during machinery in motion, which may cause injury to the person. |
| 16.7 | Carrying of Excessive Weight by a Worker The worker shall not be allowed to lift by hand or carry over his head, back or shoulder more than the maximum limit set by the prescribed rules for the construction Workers. |
| 16.8 | Dangerous and Harmful Gases / Equipment |

| TENDER NO – PSER:SCT:SAL-C2078:20 | | |
|-----------------------------------|---|---------------|
| VOLUME-IF-CML-REV-00 | TECHNICAL CONDITIONS OF CONTRACT (TCC) | PAGE 10 OF 30 |

| | |
|-------|--|
| | The contractor shall ensure that the workers are not exposed to any harmful gases during any construction activity including excavation, tunneling, confined spaces etc. The contractor should not allow any worker to go into the confined space unless it is certified by Engineer (I/c) to be safe and fit for the entry to such work place. Proper record and work permits should be followed to carry out such works. |
| 16.9 | Dangerous and Harmful Gases / Equipment The contractor shall ensure that the workers are not exposed to any harmful gases during any construction activity including excavation, tunneling, confined spaces etc. The contractor should not allow any worker to go into the confined space unless it is certified by Engineer (I/c) to be safe and fit for the entry to such work place. Proper record and work permits should be followed to carry out such works. |
| 16.10 | Overhead Protection The contractor shall ensure that any area exposed to risk of falling materials, articles or objects is roped off or cordoned off or otherwise suitably guarded from inadvertent entry of any person. Wherever there is a possibility of falling of any material, equipment or construction workers while working at heights, a suitable and adequate safety net should be provided. The safety net should be in accordance with BIS Standards. |
| 16.11 | Working at Heights All working platforms, ways and other places of construction work shall be free from accumulations of debris or any other material causing obstructions and tripping. Wherever workers are exposed to the hazard of falling into water, the contractor shall provide adequate equipment for saving the employees from drowning and rescuing from such hazards. The contractor shall provide boat or launch equipped with sufficient number of life buoys, life jackets etc. manned with trained personnel at the site of such work. Every opening at elevation from ground level through which a building worker, vehicle, material equipment etc. may fall at a construction work shall be covered and/or guarded suitably by the contractor to prevent such falls. Wherever the workers are exposed to the hazards of falling from height, the contractor shall provide full harness safety belts fitted with fall arresting systems to all the employees working at higher elevations and life line of 8 mm diameter wire rope with turn buckles for anchoring the safety belts while working or moving at higher elevations. Safety nets shall also be provided for saving them from fall from heights and such equipment should be in accordance with BIS standards. Wherever there is a possibility of falling of any material, equipment or construction workers while working at heights, a suitable and adequate safety net should be provided. The safety net should be in accordance with BIS Standards. The contractor shall provide standard prefabricated ladders on the columns where the workers are required to use them as an access for higher elevations till permanent staircase is provided. The workers shall be provided with safety belts permanent staircase is provided. The workers shall be provided with safety belts fitted with suitable fall arresting system (Fall arrestors) for climbing/getting down through ladders to prevent fall from height. |
| 16.12 | Handling of Hazardous Chemicals The Contractor will notify well in advance to the Engineer I/c of his intention to bring to the Site any container filled with liquid or gaseous fuel or explosive or petroleum substance or such chemicals which may involve hazards. NTPC shall have the right to prescribe the conditions, under which such container is to be stored, handled and used during the performance of the works and the Contract shall strictly adhere to and comply with such instructions. The Engineer I/c shall have the right at his sole discretion to inspect any such container or such construction plant / equipment for which material in the container is required to be used and if in his opinion, its use is not safe, he may forbid its use. No claim due to such prohibition shall be entertained by NTPC and NTPC shall not entertain any claim of the Contractor towards additional safety provisions / conditions to be provided for / constructed. Further, any such decision of the Engineer I/c shall not, in any way, absolve the Contractor of his responsibilities and in case, use of such a container or entry thereof into the Site area is forbidden by NTPC, the Contractor shall use alternative methods with the approval of the NTPC without any cost implication to the NTPC or extension of work schedule. Where it is necessary to provide and / or store petroleum products or petroleum mixtures and explosives, the Contractor shall be responsible for carrying-out such provision and / or storage in accordance with the rules and regulations laid down in Petroleum Act 1934, Explosives Act 1948, and Petroleum and Carbide of Calcium Manual published by the Chief Inspector of Explosives of India. All such storage shall have prior approval of the Engineer I/c. In case any approvals are necessary from the Chief Inspector (Explosives) or any statutory authorities, the Contractor shall be responsible for obtaining the same. The Contractor shall be fully responsible for the safe storage of his and his Sub- contractor's radio-active sources in accordance with BARC/DAE (Bhabha Atomic Research Centre/ Department of Atomic Energy, Govt. of India) Rules and other applicable provisions. All precautionary measures stipulated by BARC/DAE in connection with use, the contractor would take storage and handling of such material. The contractor shall provide suitable personal protective equipments to the workers who are handling the hazardous and corrosive substances including alkalis and acids. As a precautionary measure the contractor should keep the bottles filled with distilled water in cupboard / Boxes near work place for emergency eye |

| TENDER NO – PSER:SCT:SAL-C2078:20 | | |
|-----------------------------------|---|---------------|
| VOLUME-IF-CML-REV-00 | TECHNICAL CONDITIONS OF CONTRACT (TCC) | PAGE 11 OF 30 |

| | |
|-------|--|
| | wash by worker exposed to such hazardous chemicals. |
| 16.13 | Eye Protection The contractor shall provide suitable personal protective equipment to his workmen depending upon the nature of hazards and ensure their usage by the workers engaged in operations like welding, cutting, chipping, grinding or similar operations which may cause injuries to his eyes. |
| 16.14 | Excavation The contractor shall take all necessary measures during excavation to prevent the hazards of falling or sliding material or article from any bank or side of such excavation which is more than one and a half meter above his footing by providing adequate piling, shoring, bracing etc. against such bank or sides. Adequate and suitable warning signs shall be put up at conspicuous places at the excavation work to prevent any persons or vehicles falling into the excavation trench. No worker should be allowed to work where he may be stuck or endangered by excavation machinery or collapse of excavations or trenches. |
| 16.15 | Electrical Hazards The contractor should ensure that all electrical installations at the construction work comply with the requirements of latest electricity acts / rules. The contractor shall take all adequate measures to prevent any worker from coming into physical contact with any electrical equipment or apparatus, machines or live electrical circuits which may cause electrical hazards during the construction work. The contractor shall provide the sufficient ELCBs / RCCBs for all the portable equipments, electrical switchboards, distribution panels etc. to prevent electrical shocks. The contractor should ensure use of single I double insulated hand tools or low voltage i.e., 110 volts hand tools. The contractor should also ensure that all temporary electrical installations at the construction works are provided with earth leakage circuit breakers. |
| 16.16 | Vehicular Traffic The contractor should employ vehicle drivers who hold a valid driving license under the Motor Vehicles Act, 1988. |
| 16.17 | Lifting Appliances, Tools & Tackles, Lifting Gear And Pressure Plant & Equipment etc. The contractor shall ensure all the lifting appliances, tools & tackles including cranes etc., lifting gear including fixed or movable and any plant or gear, hoists, Pressure Plant and equipment etc. are in good condition and shall be examined by competent person and only certified shall be used at sites. Periodical Examination and the tests for all lifting / hoisting equipment & tackles shall be carried out. A register of such examinations and tests shall be properly maintained by the Contractor and will be promptly produced as and when desired by the Engineer I/c or by the person authorized by him. |
| 16.18 | Excessive Noise, Vibration The contractor shall take adequate measures to protect the workers against the harmful effect of excessive noise or vibration. The noise should not exceed the limits prescribed under the concerned rules, Noise Pollution (Regulation and Control) Rules, 2000. |
| 16.19 | Electrical Installations The Contractor shall not interfere or disturb electric fuses, wiring and other electrical equipment belonging to the Employer or other contractors under any circumstances, whatsoever, unless expressly permitted in writing by the Engineer I/c to handle such fuses, wiring or electrical equipment. Before the Contractor connects any electrical appliances to any plug or socket belonging to the other contractor or the NTPC, he shall <ul style="list-style-type: none"> i) Satisfy the Engineer I/C that the appliance is in good working condition; ii) Inform the Engineer I/C of the maximum current rating, voltage and phases of the appliances; iii) Obtain permission of the Engineer I/C detailing the sockets to which the appliances may be connected. <p>The Engineer I/C will not grant permission to connect until he is satisfied that:</p> <p>The appliance is in good condition and is fitted with suitable plug; having earth connection with the body.</p> <p>Wherever armored / metallic sheathed multi core cable is used, the same armored / sheathed should be connected to earth.</p> <ul style="list-style-type: none"> iv) No repair work shall be carried out on any live equipment. The Engineer I/c must declare the equipment safe and a permit to work shall be issued by the NTPC / contractor as the case may be to carry out any repair / maintenance work. While working on electric lines / |

| TENDER NO – PSER:SCT:SAL-C2078:20 | | |
|-----------------------------------|---|---------------|
| VOLUME-IF-CML-REV-00 | TECHNICAL CONDITIONS OF CONTRACT (TCC) | PAGE 12 OF 30 |

| | |
|---------|---|
| | <p>equipments whether live or dead, suitable type and sufficient quantity of tools will have to be provided by the contractor to electricians / workmen / Officers.</p> <p>v) The contractor shall employ necessary number of qualified, full time Electricians / Electrical Supervisors to maintain his temporary electrical installation.</p> <p>The installations are provided with suitable ELCBs and RCCBs wherever required</p> |
| 16.20 | Reporting of Accident and Investigation |
| | In case any accident occurs during the construction / erection or other associated activities undertaken by the Contractor thereby causing any near miss, minor or major or fatal injury to his employees due to any reason, whatsoever, it shall be the responsibility of the Contractor to promptly inform the same to the Engineer I/C, NTPC Safety Officer with a copy to NTPC Head of Project in the prescribed form and also to all the authorities envisaged under the applicable laws. |
| 16.21 | Right to stop Work |
| 16.21.1 | BHEL shall have the right at his sole discretion to stop the work, if in his opinion the work is being carried out in such a way that it may cause accidents and endanger the safety of the persons and / or property, and / or equipments. In such cases, the contractor shall be informed in writing about the nature of hazards and possible injury / accident and he shall comply to remove shortcomings promptly. The Contractor after stopping the specific work can, if felt necessary appeal against the order of stoppage of work to the Project Manager, BHEL within 3 days of such stoppage of work and decision of the Project Manager in this respect shall be conclusive and binding on the Contractor. |
| 16.21.2 | The Contractor shall not be entitled for any damages / compensation for stoppage of work, due to safety reasons and the period of such stoppage of work shall not be taken as an extension of time for Completion of the Facilities and will not be the ground for waiver of levy of liquidated damages. |
| 16.22 | Fire Protection |
| | The contractor shall provide sufficient fire extinguishers at place /s of work. The fire extinguishers shall be properly maintained as per relevant BIS Standards. The employees shall be trained to operate the fire extinguishers / equipment. |
| 16.23 | Penalties |
| | <p>I. If the Contractor fails in providing safe working environment as per the Safety Rules of NTPC or continues the work even after being instructed to stop the work by the Engineer I/C as provided in, the Contractor shall be penalized at the rate of Rs. 25,000/- per day or part thereof till the instructions are complied with and so certified by the Engineer I/C. However, in case of accident, the provisions contained in relevant sub clause shall also apply in addition to the penalties mentioned in this sub-clause.</p> <p>II. If the Contractor does not take all safety precautions and / or fails to comply with the Safety Rules as prescribed by the Employer or under the applicable law for the safety of the plant and equipment and for the safety of personnel and the contractor does not prevent hazardous conditions which cause injury to this own employees or employees of other contractors, or NTPC's employees or any other person who are at the Site or adjacent thereto, the Contractor shall be responsible for payment of penalty to NTPC as per the following schedule:-</p> <p>a) Fatal injury or accident causing death: Penalty @10% of contract value or Rs. 5,00,000/- per person, which ever is less.</p> <p>b) Major injuries or accident causing 25% or more permanent disablement to workmen or employees: Penalty @2.5% of contract value or Rs. 1,00,000/- per person which ever is less</p> <p>Permanent disablement shall have the same meaning as indicated in The Workmen's Compensation Act' 1923. The penalty mentioned above shall be in addition to the compensation payable to the workmen / employees under the relevant provisions of the Workmen's Compensation Act' 1923 and rules framed there under or any other applicable laws as applicable from time to time.</p> <p>III. If any contractor worker found working without using the safety equipment like safety helmet, safety shoes, safety belts, etc. or without anchoring the safety belts while working at height the Engineer I/c / Safety Officer of NTPC shall have the right to penalize the contractor for Rs. 200/- per person per day and such worker shall be sent out of the workplace immediately and shall not be allowed to work on that day. Engineer I/c / Safety Officer of NTPC will also issue a notice in this regard to the contractor.</p> |

| TENDER NO – PSER:SCT:SAL-C2078:20 | | |
|-----------------------------------|---|---------------|
| VOLUME-IF-CML-REV-00 | TECHNICAL CONDITIONS OF CONTRACT (TCC) | PAGE 13 OF 30 |

| | |
|--------|--|
| | <p>IV. If two or more fatal accidents occur at same NTPC site under the control of contractor during the period of contract and he has</p> <ol style="list-style-type: none"> (1) not complied with keeping adequate PPEs in stock or (2) defaulted in providing PPEs to his workmen (3) not followed statutory requirements / NTPC safety rules (4) been issued warning notice/s by NTPC head of the project on non observance of safety norms (5) not provided safety training to all his workmen, the contractor can be debarred from getting tender documents in NTPC for two years from the date of last accident. <p>The safety performance will also be one of the overriding criteria for evaluation of overall performance of the contractors by NTPC. The contractor shall submit the accident data including fatal / non-fatal accidents for the last 3 years where he has undertaken the construction activities Projects-wise along with the tender documents. This will also be considered for evolution of tender documents. If the information given by the contractor found incorrect, his contract will be liable to be terminated.</p> |
| 16.24 | The Contractor will make available minimum quantity of all safety equipments and safety personal protection equipments (PPEs) of required specifications as per suggestive list included bidding documents as a part of "List of minimum T & P". Further Contractor will ensure availability of additional requirement for individual worker and safety equipment as per site requirement during execution of the contract till its completion. |
| 16.25 | Award |
| | If the Contractor's performance on safety front is found satisfactory i.e. without any fatal/reportable accident in the year of consideration; he may be considered for suitable award "ACCIDENT FREE SAFETY MERITORIOUS AWARD" as per scheme of the employer. |
| 16.26 | The Contractor shall abide by the following during Construction and Erection activities |
| | <ol style="list-style-type: none"> I. Chain pulley block shall not be used for loads more than 2 (Two) tonne. II. Hydra shall not be used for material transport. III. Cage shall necessarily be provided to Monkey ladders of height more than 4 m. IV. Fencing shall be provided to all Electrical Distribution boards and transformers etc. |
| 16.27 | Further details of applicable HSE norms shall be as per HSE clause of Tender / SCC. |
| 17.0 | PROJECT MANAGEMENT / CONSTRUCTION MANAGEMENT To meet the need of construction management at site, contractor shall provide the following services within quoted/ accepted rates. |
| 17.1 | PLANNING & MONITORING |
| 17.1.1 | The bidder shall prepare detail construction schedule (L-3) as per completion dates given in this document. This schedule must include all milestone and key activities for each sub-system / components in the areas of engineering (wherever applicable), procurement, manufacture (wherever applicable), excavation/ construction/ erection. This network must conform to the overall project schedule. The bidder should also ensure monitoring of these activities at least weekly basis to start with and on daily basis whenever required by BHEL. |
| 17.1.2 | The bidder shall also prepare progress report indicating progress on key activities, management summary for critical activities, list of actions requiring attention of BHEL. This schedule is to be preferably made in PRIMAVERA / MS PROJECTS, so that the same is compatible with BHEL's project management software. |
| 17.1.3 | <p>The bidder will have to supply & install of 01 nos. laser jet Colour printer cum Scanner compatible for A4 size (ink / cartridge for which to be supplied as and when required), and 02 nos. Civil Billing Software (e.g Super Civil CD, etc) for Running Bill & Final Bill, as per instruction of BHEL for exclusive use of BHEL.</p> <p>This printer shall remain contractor's property and they will be allowed to take out the same after completion of contract. The contractor shall provide data / information etc. in prescribed formats for periodical updating of the progress reports, material management reports, updating of network pertaining to the contractor's scope of work etc.</p> <p>The contractor shall also provide 01 (one) no computer operator and 01 (one) number service staff for miscellaneous service for BHEL's use at site/ Kolkata for reconciliation, progress review & day-to-day planning purpose, documentation etc. These facilities are to be provided within 30 days from LOI date till completion of scheduled contract period.</p> |

| TENDER NO – PSER:SCT:SAL-C2078:20 | | |
|-----------------------------------|---|---------------|
| VOLUME-IF-CML-REV-00 | TECHNICAL CONDITIONS OF CONTRACT (TCC) | PAGE 14 OF 30 |

| | | |
|-------------|--|---------------------------------------|
| | If contractor fails to provide printer / personnel as per requirement, for a continuous period of fifteen days or more, BHEL shall have the right to deduct the amount as per following rates on prorata basis, from contractor's RA bill or any other dues. | |
| 17.1.3.1 | @ Rs 20,000/- (Twenty thousand)/ month for each computer operator or at actuals (rate +30%) if BHEL arranges this facility, whichever is lower. | |
| 17.1.3.2 | @ Rs 15,000/- (Fifteen thousand) / month for each service staff or at actuals (rate +30%) if BHEL arranges this facility, whichever is lower. | |
| 17.1.3.3 | @ Rs 10,000/- (Ten thousand)/ month for printer and @ Rs 5,000/- for each Civil software or at actuals (rate +30%) if BHEL arranges this facility, whichever is lower. | |
| 17.1.3.4 | In the event of the contract period getting extended beyond the stipulated time for reasons attributable to the contractor then the above services till the extended period shall be provided by contractor free of cost to BHEL. In the event of the contract period getting extended beyond the stipulated time for reasons not attributable to you and if BHEL decides to retain the above services then payment of computer operator & service staff shall be done as per the rates mentioned at 17.1.3.1 & 17.1.3.2 respectively. | |
| 17.1.4 | The contractor's site office must have facilities of communications like Fax, E-mail, and telephone with STD facility within a month from LOI. | |
| 17.2 | PROGRESS REPORTING | |
| 17.2.1 | The bidder shall submit daily, weekly and monthly progress reports for work force, materials reports, consumables (gases/electrodes) report and other reports as per pro-forma considered necessary by BHEL. In case of any failure on contractor's part to comply with this, BHEL may at its discretion, consider to withhold part payment against their RA bills. | |
| 17.2.2 | The progress report shall indicate the progress achieved against planned with reasons indicating delays, if any, and shall give the remedial actions which the contractor intends to take to make good the slippage or lost time, so that further works again proceed as per the original program and the slippages do not accumulate and effect the overall program. | |
| 17.2.3 | The daily work force reports shall clearly indicate the work force deployed, category-wise specifying also the activities in which they are engaged. | |
| 17.2.4 | Weekly progress review meetings will be held at site during which actual progress during the week vis-à-vis scheduled program shall be discussed or actions to be taken for achieving targets. For discussions, the contractor shall present program of subsequent week. The contractor shall constantly update/revise his work program to meet the overall requirement. | |
| 17.2.5 | Periodic progress reviews on the entire activities of execution in respect of supply and works in scope of bidder will be held once in a month at Kolkata/site. These meetings will be attended by reasonably higher officials of the contractor and will be used as a forum for discussing all areas where progress needs to be speeded up. The contractor shall be further responsible for ensuring that suitable steps are taken to meet various targets decided upon such meetings. | |
| 17.2.6 | During construction contractor shall take an average forty colour digital photograph each month (not less than nine per week) of the works during progress. In case of failure in providing such photograph in each month, an amount of Rs. 10,000/- per month shall be deducted from contractor's RA bill. | |
| 17.2.7 | Successful bidder has to provide for electronic/ computerized storing and re-production/ printing/ plotting of various data, log sheets, protocols, measurements etc. These may be stored in CD (as per requirement) and handed over to BHEL as per requirement. | |
| 17.3 | SITE ORGANIZATION | |
| 17.3.1 | The contractor shall maintain a site organization of adequate strength in respect of manpower, construction machinery and other implements at all time for smooth execution of the contract headed by a competent construction manager for site operations with sufficient level of authority to take site decisions. The vendor will submit organization chart (showing the name of SITE-IN-CHARGE) with individual bio-data indicating various levels of experts to be posted for supervision in the fields of supervision and execution, quality, material management, planning, safety, etc. The organization shall be reinforced from time to time, as required to make up slippage (if any) from the schedule without any commercial implication to BHEL. The organization chart is to be submitted within 10 days from the date of LOI. | |
| 17.3.2 | Following (minimum) engineering manpower with power plant construction background to be deployed at site by the successful vendor for their day to day supervision etc. | |
| 17.3.2.1 | Qualified safety officer (exclusive for safety supervision for project jobs). | Officer – One no (from start of work) |
| 17.3.2.2 | Engineer for quality inspection (civil+ structural) | One no. (from start of work) |
| 17.3.2.3 | Site supervising engineer for civil & structural works. | One no (from start of work) |

| TENDER NO – PSER:SCT:SAL-C2078:20 | | |
|-----------------------------------|---|---------------|
| VOLUME-IF-CML-REV-00 | TECHNICAL CONDITIONS OF CONTRACT (TCC) | PAGE 15 OF 30 |

| | | |
|----------|---|------------------------------|
| 17.3.2.4 | Supervising for Civil & Structural job. | Two nos (from start of work) |
| 17.3.2.5 | Engineer / Supervisor for other functions like billing, palnning, store & purchase, material management, fin, admin etcare to be provided as per site requirement and not considered above. | |
| 17.3.3 | Deputation of above man-power shall be jointly decided at site in line with construction schedule. Further induction of manpower regarding site supervisor & site engineer will be decided at site as per requirement without any financial implication. | |
| 17.3.4 | In the event of non deputation of engineer / supervisor/safety officer by the bidder as per above agreed schedule, BHEL shall reserve the right to deduct Rs 60,000.00 per man-month for engineer, Rs 35,000.00 per man-month for the supervisor / safety officer from RA bills. | |
| 17.3.5 | BHEL reserves the right to reject or approve the list of personnel proposed by the contractor. The persons whose bio-data have been approved by BHEL will have to be posted at site and deviation in this regard will not be permitted unless specific & reasonable justification is made. | |
| 17.3.6 | In addition to above, a well experienced qualified engineer to be designated, as 'Project Co-coordinator', shall be deployed by the contractor. Such engineer shall have adequate exposure on the job and shall remain fully involved in all planning activities, guidance etc to contractor's own team during the complete execution period of contract. | |
| 17.3.8 | The contractor should also submit to BHEL for approval a list of T&Ps along with their fitness certificates. The tools & tackles shall not be removed from site without written permission of BHEL. | |
| 17.3.9 | The contractor should also submit network programs for the erection of various items. These networks shall show the NTPC / BHEL hold points, which have to be cleared by NTPC / BHEL, or their authorized representatives before further erection can take place. These programs for the erection would clearly identify responsibilities of the contractor and NTPC/ BHEL. It is the responsibility of the contractor to get the Networks approved by BHEL within four weeks of the date of finalization of award of work / placement of LOI. | |
| 17.4 | CONSTRUCTION MANAGEMENT | |
| 17.4.1 | Based on the approved program, the contractor shall submit a program of construction / erection / commissioning for the implementation. These programs would be amplified showing start of erection and subsequent activities and shall form the basis for site execution and detail monitoring. The three monthly rolling program with the first month's program being tentative based on the site condition would be prepared based on these programs. The contractor shall also be involved along with NTPC / BHEL to tie up detailed resources mobilization plan over the period of the contract matching with the performance targets. | |
| 17.4.2 | The program would be jointly finalized by the site in-charge of the contractor with BHEL / NTPC's project coordinator as well as the site-planning representative. The erection program will also identify sequential events matching financial turnover. | |
| 17.4.3 | The contractor is liable to furnish all documentary evidences towards payment of Works Contract Tax as and when required by BHEL. | |
| 18.0 | TEST CERTIFICATE FOR T&P | |
| | All T&P, lifting tackles and pulling devices to be deployed by the contractor must bear valid / latest test certificates for their suitability, and the documents shall be preserved at site. | |
| 19.0 | T&P TO BE PROVIDED BY BHEL | |
| | No T & P is envisaged to be issued by BHEL for this package. | |
| 20.0 | MATERIAL HANDLING (BHEL ISSUED MATERIAL) | |
| 20.1 | Structural steel (as per BOQ / Rate Schedule) will be issued free of cost by BHEL for use in the work covered in this contract from it's project premises or any other issue point (within a distance of approx. 5000 Mts. from work premises) as will be specified by the Engineer. Receipt of material from store area loading the same for transportation and transporting / unloading the same to the work site will be in the scope of contractor. | |
| 20.2 | BHEL reserve the right to recover from the contractor any loss arising out of damage/ theft or any other causes of the issued material at receiving point at BHEL stores or storage yard or during verification/stacking at contractor premises or at any time under the custody of the contractor | |
| 20.3 | The Contractor shall collect the materials from the specified places at his own cost and store the same at the work site or in his stores as per standard norms. Materials issued will be used only for construction of permanent work. | |
| 20.4 | The contractor shall take care of material issued by BHEL and shall protect the same from damage and weathering. Contractor shall construct waterproof cement store (Minimum capacity shall be equivalent to quantity of cement required for initial 02 months) for storing and stacking of cement at his own cost. Design & drawing required shall be prepared by the vendor and shall be approved by BHEL's site in-charge before taking up the construction. | |
| 20.5 | The contractor shall in no case be entitled for any compensation or damages on account of any delay in | |

| TENDER NO – PSER:SCT:SAL-C2078:20 | | |
|-----------------------------------|---|---------------|
| VOLUME-IF-CML-REV-00 | TECHNICAL CONDITIONS OF CONTRACT (TCC) | PAGE 16 OF 30 |

| | |
|-------------|---|
| | supply or non-supply thereof for all or any such material. |
| 20.6 | No material shall be issued to the contractor except as those indicated above i.e. cement and steel, unless otherwise expressly provided for in the contract. Contractor will have to make his own arrangement at his own cost for procurement of any other material as required for the works and of such quality as acceptable to BHEL. |
| 20.7 | The contractor shall maintain proper store account for all the BHEL issued materials and shall give three copies of monthly reconciliation statement of such account to the BHEL. |
| 20.8 | Contractor shall carry out in complete association with BHEL, the material management functions and execution like day to day update of materials, issued to contractor, accounting for surplus / scrap material returned etc. These functions shall also be carried out through system utilizing suitable software. Contractor shall provide experienced software personnel to associate on dedicated basis for efficient discharge of the same. |
| 20.9 | The contractor shall solely be responsible for the safety & quality of material after it is handed over and issued to contractor by BHEL. |
| 20.10 | BHEL issued materials shall not under any circumstances taken out of the project site unless otherwise permitted by BHEL. |
| 20.11 | All the necessary lifting tackles, cranes, hydra, tools & plants including tractors, trailers, trucks, pulley blocks, jacks, winches, wire ropes etc, of suitable capacities and other equipments incidental to carry out this work shall have to be arranged by the contractor at his cost. BHEL Engineer reserves the right to inspect lifting tackles and equipment before allowing their use. Such approval however shall not relieve the responsibility of the contractor to ensure safe handling of equipment taking the precautions to avoid any accident and damage to other equipment and personnel. |
| 21.0 | RETURN OF MATERIALS |
| 21.1 | Scrap generated and excess materials issued to the contractor shall be reconciled and returned to BHEL stores. |
| 22.0 | CEMENT |
| 22.1 | All cement required for the construction work shall be arranged by the contractor. |
| 22.1.1 | The cement required for this work shall be sourced by the contractor from BHEL / NTPC approved sources only. |
| 23.0 | REINFORCEMENT STEEL |
| 23.1 | All reinforcement steel required for the construction work shall be arranged by the contractor. |
| 23.2 | The reinforcement steel required for this work shall be sourced by the contractor from BHEL/NTPC approved sources only. |
| 24.0 | PROCUREMENT OF FASTNERS, SEMIS, DECK SHEETS, ETC |
| 24.1 | The items required for execution of the work as per BOQ cum Rate Schedule shall be arranged by the contractor from BHEL / NTPC approved sources |
| 24.2 | Suggestive list of probable suppliers attached with this tender. However these are subject to approval of customer NTPC |
| 25.0 | CONSTRUCTION OF TEMPORARY OFFICE, STORES ETC |
| 25.1 | The contractor shall arrange at his own cost cleaning of area allotted, construction of his temporary office, stores, cement godown etc. and also the watch and ward of all the above. Materials required for the same shall be provided by contractor at his own cost. |
| 25.2 | BHEL contemplates to provide fabrication yard at one place. (Fabrication yard to be developed by the vendor). |
| 25.3 | Contractor shall construct cement store with CGI/ asbestos roofing (slope) with brick masonry wall, PCC flooring. Materials required for the same shall be provided by contractor at his own cost. Cement has to be kept over wooden raised platform. Stacking of cement is to be done as per IS codes with proper illumination and locking arrangements. |
| 26.0 | TOOLS & PLANTS (TO BE PROVIDED BY CONTRACTOR) |
| 26.1 | Tentative list of T&P to be deployed by contractor for successful completion of work is detailed below. |
| 26.2 | It may be noted that the list is not exhaustive and is only for general guidance. The contractor is required to provide all necessary T&P (other than those specified to be provided by BHEL, if any) measuring (calibrated) instruments & handing equipments to maintain work progress for timely completion of total work as per contract. In case of project requirement, some activities may have to pre-pone. In such cases the contractor may have to deploy additional T&P. Quoted rate shall be inclusive of such emerging requirements. However, contractor shall submit deployment plan of all T&P along with tender bid. |

| TENDER NO – PSER:SCT:SAL-C2078:20 | | |
|-----------------------------------|---|---------------|
| VOLUME-IF-CML-REV-00 | TECHNICAL CONDITIONS OF CONTRACT (TCC) | PAGE 17 OF 30 |

| | | |
|----------|---|--|
| 26.3 | <p>In the event of any failure on the part of the contractor to deploy T & P to sustain desired work progress, BHEL may at its discretion:</p> <ol style="list-style-type: none"> Terminate the contract on this ground, or Take out any part or whole work of the contract from the scope of the contractor. <p>In the event of failure of contractor to deploy necessary and sufficient T&P/ IMTEs to maintain work progress, BHEL will also be at liberty to arrange the same at the risk & cost of contractor including transportation cost of same from any of BHEL site/ other agency & charges as applicable shall be deducted from contractor's RA bill. Decision of BHEL in this regard will be final & binding on contractor.</p> | |
| 26.4 | Following Major T&Ps to be arranged by contractor within the time as indicated: | |
| | Major T&P items | Mobilizing time from LOI date |
| 26.4.1A | 05 Nos. conventional DMC/RMC piling rigs and accessories capable of pile boring/drilling in all types of strata | 02 nos with in 15 days. 02 nos with in 30 days 01 No. as per requirement |
| 26.4.1B | 2 sets - Kentledge arrangement (preferably concrete blocks with structural arrangement) with high capacity hydraulic jack, dial gauges for vertical load test of pile. | Within 15 days |
| 26.4.2 A | 2 No. hydraulic excavator / Poclain (one no. with rock breaker attachment) | 1st – Within 30 days 2nd – As per site requirement |
| 26.4.2 B | 1 No. JCB / Pay Loader | As per requirement |
| 26.4.3 | 1 no. dozer. | As per requirement |
| 26.4.4 | 2 nos. dumper | Within 30 days. |
| 26.4.5 | 2 nos. power driven earth rammer | Within 60 days. |
| 26.4.6 | 2 No. jack hammers / pavement breakers with Compressor | 01 no. – Within 15 days 01 no. – As per site requirement |
| 26.4.7 | 1 no total station with adequate arrangement for Surveyors. | Within 15 days. |
| 26.4.8 | 2 nos auto level & staff | Within 15 days. |
| 26.4.9 | 2 nos. reinforcement bending machine | Within 30 days. |
| 26.4.10 | 2 nos. reinforcement cutting machine | Within 30 days. |
| 26.4.11 | 1 no. portable automatic concrete batching plant with printing facility (Output 15 to 30 cum/ hr) | To be commissioned Within 15 days from start of work. |
| 26.4.12 | 2 nos. transit mixer (4.5/5 /6 Cum capacity) | Within 15 days. |
| 26.4.13 | 2 nos. concrete pump (20 cum/ hr min capacity) | 1 No.-Within 15 days Balance 01 No-As per requirement |
| 26.4.14 | Deleted | |
| 26.4.15 | 1 no. pick & carry type tyre mounted mobile crane. (10/ 12 T cap) | As per site requirement |
| 26.4.16 | 1 no. crawler cranes 40/45 T capacity crawler/tyre mounted crane | As per site requirement |
| 26.4.17 | Welding rectifier (as per requirement) | As per site requirement. |
| 26.4.18 | 1 no. trailer – 30 T | As per site requirement. |
| 26.4.19 | Power winch – 3T - (as per requirement) | As per site requirement. |
| 26.4.20 | 1 no. Concrete cutting power tools (DD2E of HILTI/BOSCH make) | As per site requirement |
| 26.4.21 | 1 no. Concrete core Cutting machine for drilling in concrete upto 300 mm dia alongwith diamond bits | As per site requirement. |
| 26.4.22 | 2 nos. self priming dewatering pump 5 HP (diesel/ electric) | Within 15 days. |
| 26.4.23 | 2 nos. self priming dewatering pump 2 HP (diesel/ electric) | As per site requirement. |
| 26.4.24 | 2 nos. curing pump – 1.5 /2 HP (pump for curing at heights) | As per site requirement |
| 26.4.25 | 60 nos concrete cube moulds | 30 Nos.-Within 15 days. Balance 30 Nos- Within 30 days. |
| 26.4.26 | Civil laboratory equipments as per list attached in ANNEX `A` with temporary building one AC lab size 4.5mtrx6mtr and 1 non AC lab 4.5 mtrx4.5 mtr | Within 30 days. |
| 26.4.27 | 1 nos. electric winch with building hoist | As per site requirement. |

| TENDER NO – PSER:SCT:SAL-C2078:20 | | |
|-----------------------------------|---|---------------|
| VOLUME-IF-CML-REV-00 | TECHNICAL CONDITIONS OF CONTRACT (TCC) | PAGE 18 OF 30 |

| | | |
|-------------|--|--|
| 26.4.28 | Two nos drinking water tank – 1000 lit. | Within 30 days. |
| 26.4.29 | 1 No. 125KVA Electric Generator | As per site requirement. |
| 26.4.30 | 8 Nos. Concrete vibrator with adequate needle (2 Nos. diesel driven +6 Nos. electric driven) | 4 Nos (at least 1no diesel driven) within 30 Days. Balance as per requirement. |
| 26.4.31 | Portable fire extinguishers as below: Soda acid – 3 sets. Dry chemical powder – 3 sets CO2 – 2 sets. Water & sand bucket (4 buckets in one stand) – 2 sets. Fire hose with nozzle (50 M length) – 2 sets. | Within 50 days |
| 26.5 | T&P shown in the above mentioned list are tentative based on planned progress requirement. Actual Mobilisation schedule, based on front availability, drawings and material availability at site is to be reviewed and mutually agreed with BHEL site periodically from time to time for mobilisation of major T&Ps, and the same have to be adhered to. No change will be permitted without written approval of BHEL site. Further requirement will be reviewed time to time at site and contractor will provide additional T&P / equipments to ensure completion of entire work within schedule time without any financial implication to BHEL. All other T&Ps shall be provided by the contractor without any extra cost to BHEL. Vendor will give advance intimation & certification regarding capacity etc prior to dispatch of heavy equipments. | |
| 26.6 | All T&P and all IMTEs, which are required for successful and timely execution of the work covered within the scope of this tender, shall be arranged and provided by the contractor at his own cost in working condition. | |
| 27.0 | CIVIL LABORATORY | |
| 27.1. | Contractor shall establish and maintain civil laboratory with necessary equipment (as per Annexure-A) for conducting following relevant tests at site, as required: | |
| 27.1.1 | Compressive strength of cement, concrete cubes, bricks etc. | |
| 27.1.2 | Water absorption test of bricks. | |
| 27.1.3 | Earth compaction test (proctor density/ dry density and optimum moisture content, etc) | |
| 27.1.4 | Conducting of test for setting time and compressive strength of cement. | |
| 27.1.5 | Sieve analysis of fine aggregates and coarse aggregates. | |
| 27.1.6 | Bulking test of fine aggregates. | |
| 27.1.7 | Sieve analysis, moisture content, specific gravity and crushing strength of coarse aggregates. | |
| 27.1.8 | Rapid moisture meter | |
| 27.1.9 | Water test | |
| 27.2 | Other than above mentioned test, any testing required to be carried out at site as per Quality Plan and technical specification have to be arranged by contractor for all the works at his own cost | |
| 28.0 | CONSTRUCTION SCHEDULE | |
| 28.1 | The entire work shall be carried out in accordance with the construction schedule within the stipulated completion period. Within 30 days of LOI, the contractor shall discuss with BHEL site engineer and furnish the (L-3) construction schedule indicating all milestones on the basis of major activities and get it approved from BHEL Engineer. | |
| 28.2 | Contractor shall establish mix design for all concreting either by taking trial mix at site or from a reputed institution (As per BHEL's approval). Contractor shall ensure adding of admixture and minimizing of cement content in line with IS:456 & BHEL/NTPC specification. | |
| 28.3 | The contractor shall plan his work in such a manner so as to meet the overall project schedule, in consultation with BHEL / NTPC engineer. | |
| 28.4 | Contractor shall submit daily work program based on above construction schedule. Defferement of above schedule is not acceptable. Contractor will adhere to schedule and resource planning to be augmented to ensure completion as per schedule. | |
| 28.5 | Periodic progress reviews on the entire activities of execution in respect of supply & works in scope of contractor will be held once in a month at Kolkata/ site. These meetings will be attended by reasonably higher officials of the contractor and will be used as a forum for discussing all areas where progress needs to be speeded up. The contractor shall be further responsible for ensuring that suitable steps are taken to meet various targets decided upon such meetings. | |
| 28.6 | The contractor shall plan his work in such a manner so as to meet the overall project schedule, in consultation with BHEL/NTPC Engineer. | |
| 28.8 | Contractor shall submit daily work program based on construction schedule approved by BHEL/NTPC. | |
| 29.0 | COMPLETION PERIOD | |
| | The entire work shall be successfully completed in all respect within 07 (Seven) months from the date of Start of Work, as certified by Construction Manager, BHEL. | |

| TENDER NO – PSER:SCT:SAL-C2078:20 | | |
|-----------------------------------|---|---------------|
| VOLUME-IF-CML-REV-00 | TECHNICAL CONDITIONS OF CONTRACT (TCC) | PAGE 19 OF 30 |

| | |
|-------------|---|
| | <p>The contractor should arrange to mobilize and start the erection work within 15 days from the date of LOI from BHEL.</p> <p>The contractor shall discuss with BHEL site engineer & furnish detail construction schedule (L-3/ L-4) indicating all milestones on the basis of major activities and get it approved from BHEL engineer. This schedule will undergo review and based on progress vis-à-vis project requirement, contractor shall have to submit revised schedule for approval of BHEL.</p> |
| 30.0 | CERTIFICATE TOWARDS COMPLETION |
| | The work under the scope of the contractor shall be deemed to have been completed in all respects only when so certified by BHEL / NTPC. The decision of BHEL in this regard shall be final and binding on the contractor. |
| 31.0 | EXTENSION OF TIME FOR COMPLETION |
| 31.1 | If the completion of work as detailed in the scope of work gets delayed beyond the contract/ completion period, the contractor shall request for an extension of the contract and BHEL at its discretion may extend the contract. |
| 31.2 | Based on the reviews jointly signed, the works balance at the end of original contract period less the backlog attributable to the contractor shall be quantified, and the number of months of 'Time extension' required for completion of the same shall be jointly worked out. Within this period of 'Time extension', the contractor is bound to complete the portion of backlog attributable to the contractor. Any further 'Time extension' or 'Time extensions' at the end of the previous extension shall be worked out similarly. |
| 31.3 | However, if any 'Time extension' is granted to the contractor to facilitate continuation of work and completion of contract, due to backlog attributable to the contractor alone, then it shall be without prejudice to the rights of BHEL to impose penalty/ LD for the delays attributable to the contractor, in addition to any other actions BHEL may wish to take at the risk and cost of contractor. |
| 31.4 | A joint programme shall be drawn for the balance amount of work to be completed during the period of 'Time Extension', along with matching resources to be deployed by the contractor as per specified format. Review of the programme and record of shortfall shall be done. |
| 31.5 | During the period of 'Time extension', contractor shall maintain their resources as per mutually agreed program. |
| 31.6 | At the end of total work completion as certified by BHEL engineer, and upon analysis of the total delay, the portion of time extensions attributable to (i) Contractor, (ii) Force majeure conditions, and (iii) BHEL, shall be worked out and shall be considered to be exhausted in the same order. The total period of time extensions shall be the sum of (i), (ii) and (iii) above and shall be equal to period between the scheduled date of completion and the actual date of completion of contract. LD shall be imposed/ levied for the portion of time extensions attributable to contractor and recoverable from the dues payable to the contractor. |
| 32.0 | MOBILIZATION ADVANCE/ INTEREST BEARING RECOVERABLE ADVANCE |
| | Not applicable for this tender. |
| 33.0 | SECURITY DEPOSIT & PERFORMANCE BOND |
| 33.1 | Security deposit shall be applicable as per relevant clause of GCC (Volume-IB). |
| 33.2 | Performance bond is not applicable for the tender. |
| 34.0 | REVISION ON ACCEPTED CONTRACT RATE |
| 34.1 | Not applicable in this tender. |
| 35.0 | LIQUIDATED DAMAGES/PENALTY |
| 35.1 | If the completion of work is delayed beyond the completion period referred above due to reasons attributable to the contractor, they shall pay to BHEL as penalty a sum @ 0.5% of contract price per week of delay or part thereof subject to a maximum of 10% of the total contract value. |
| 35.2 | All other terms shall be as per the provision of GCC in this regard. |
| 35.3 | In case of LD recovery, the applicable GST shall also be recovered from the contractor. |
| 36.0 | CONTRACT PRICE |
| 36.1 | The bidder shall quote their rates strictly in accordance with prescribed Price schedule of Volume-III. |
| 36.2 | The quantities of the various items mentioned in the respective Price schedules, Volume-III are approximate, based on very preliminary information and may vary to any extent or to be deleted altogether. The quoted rates of each item will remain firm throughout the period of execution including extension, for reasons whatsoever, as long as variation in the total value of the work executed under any part of this contract including extra items, if any, but excluding any price variation, remains within +/- 15 % (plus/minus fifteen percent) of the awarded price (as per LOI / WO). |
| 36.3 | The unit rate quoted for various items of BOQ shall include all the stipulation mentioned in the tender documents and nothing extra over BOQ rates shall be payable. |

| TENDER NO – PSER:SCT:SAL-C2078:20 | | |
|-----------------------------------|---|---------------|
| VOLUME-IF-CML-REV-00 | TECHNICAL CONDITIONS OF CONTRACT (TCC) | PAGE 20 OF 30 |

| | |
|-------------|--|
| 37.0 | TAXES AND DUTIES |
| 37.1 | All taxes excluding GST & BOCW Cess (as specified elsewhere in the tender) but including, Charges, Royalties, any State or Central Levy and other taxes for materials if any obtained for the work and for execution of the contract shall be borne by successful bidder and shall not be payable extra by BHEL. Any increase of above at any stage during execution of contract, including extension of the contract, shall have to be borne by successful bidder contractor. Bidder's quoted/ accepted rates/ price shall be inclusive of all such requirements. |
| 37.2 | GST along with Cess (as applicable) legally leviable & payable by successful bidder as per GST Law shall be paid by BHEL, extra. Hence, bidder shall not include GST along with Cess (as applicable) in their quoted rates/ price. |
| 37.3 | Successful bidder shall furnish proof of GST registration with GSTN Portal covering the services under this contract. Registration should also bear endorsement for the premises from where the billing shall be done by successful bidder on BHEL for this project / work. |
| 37.4 | Since GST on output will be paid by BHEL separately as enumerated above, bidder's your quoted rates / price should be after considering the Input Credit under GST law at bidder's end. |
| 37.5 | TDS under Income Tax shall be deducted at prevailing rates on gross invoice value from the running bills (RA bills) unless exemption certificate from the appropriate authority / authorities is furnished. |
| 37.6 | TDS under GST shall be deducted at applicable rates on gross invoice value from the running bills (RA bills). |
| 37.7 | Bidder shall note that GST Tax Invoice complying with GST Invoice Rules (Section 31 of GST Act & Rules referred thereunder) wherein the 'Bill To' details shall encompass following. BHEL GSTN – Refer attached GSTN code table of BHEL. Name - BHARAT HEAVY ELECTRICALS LIMITED Address - Shall be intimated later. Specific details of BHEL GSTN, Name and Address as stated above, have been specified elsewhere in the tender. |
| 37.8 | Successful bidder to intimate immediately on the day of removal of goods (in case of any supply of goods) to BHEL along with all relevant details and send a scanned copy of Tax Invoice to BHEL through following communication mode for enabling BHEL to meet its GST related compliances. Portal address. and Email address – Shall be intimated later. Specific details of above shall be intimated to successful bidder by BHEL at appropriate juncture. |
| 37.9 | In case of delay in submission of above mentioned documents on the date of despatch, BHEL may incur penalty / interest for not adhering to Invoicing Rules under GST Law. The same will be liable to be recovered from successful bidder, in case such delay is not attributable to BHEL. |
| 37.10 | In case of raising any Supplementary Tax Invoice (Debit / Credit Note), successful bidder shall issue the same containing all the details as referred to in Section 34 read with Section 31 of GST Act & Rules referred there under. |
| 37.11 | Successful bidder shall comply with the Time Limit prescribed under the GST Law and rules thereof for raising of the Tax Invoice. If any supply of goods is applicable, successful bidder shall also ensure prompt delivery of goods after despatch. |
| 37.12 | Bidder shall note that in case GST credit is delayed / denied to BHEL due to delayed / non receipt of goods and / or Tax Invoice or expiry of the timeline prescribed in GST Law for availing such ITC, or any other reasons, not attributable to BHEL, GST amount shall be recoverable from successful bidder along with interest levied/ leviable on BHEL, as the case may be. |
| 37.13 | Successful bidder shall upload the invoices raised on BHEL in GSTR-1 within the prescribed time as given in the GST Act. Bidder shall note that in case of delay in declaring such invoice in your return and GST credit availed by BHEL is denied or reversed subsequently as per GST Law, GST amount paid by BHEL towards such ITC reversal as per GST law shall be recoverable from the successful bidder along with interest levied / leviable on BHEL. |
| 37.14 | Way Bill: Successful bidder to arrange for way bill / e-waybill for any transfer of goods for the execution of the contract. Successful bidder has to make their own arrangement at their cost for completing the formalities, if required, with Issuing Authorities, for bringing materials, plants & machinery at site for execution of the works under this contract, Road Permit / Way Bill, if required, shall be arranged by successful bidder and BHEL will not supply any Road Permit/ Way Bill for this purpose. |
| 37.15 | Any new taxes & duties, if imposed subsequent to due date of offer submission as per NIT & TCN, by statutory authority during contract period (including extension, if the same is not attributable to you), shall be reimbursed by BHEL on production of relevant supporting document to the satisfaction of BHEL. However, you shall obtain prior approval from BHEL before depositing new taxes and duties. |
| 37.16 | Benefits and / or abolition of all existing taxes must be passed on to BHEL against new taxes, if any, proposed to be introduced at a later date. |
| 38.0 | INTERIM PAYMENTS |

| TENDER NO – PSER:SCT:SAL-C2078:20 | | |
|-----------------------------------|---|---------------|
| VOLUME-IF-CML-REV-00 | TECHNICAL CONDITIONS OF CONTRACT (TCC) | PAGE 21 OF 30 |

| | |
|--------|---|
| 38.1 | For all items of works, as per the the Price schedule, Vol-III, billing shall be on item rate basis. However, Interim Payment shall be limited to 95% of gross bill amount. |
| 38.2 | All admissible recovered/ adjustments etc. shall be made from the interim payable amount. |
| 38.3 | Balance 5 % retained from each RA bill will be released on completion of guarantee period subject to confirmation of full GST Credit to BHEL. Any Interest if levied thereon, for reasons elaborated in tax & duties clause of the tender and attributable to you, will be recovered from the Final Payment/ Retention amount. However, this 5 % payment can be released against submission of bank guarantee valid for the guarantee period as stated above in Proforma / Format of performance bank guarantee, subject to receipt of certificate that all works are completed in all respects and confirmation of full GST Credit to BHEL. Submission of bank guarantee towards retention is separate and other bank guarantee(s) cannot be utilized for this purpose. This retention bank guarantee will be refunded after guarantee period. |
| 38.4 | 1.5 % of gross bill amount shall be paid in the following manner on certification by BHEL engineer after compliance of each of following activity in each month. In case of non-fulfilment of respective activity by vendor in each month, no payment shall be made by BHEL against corresponding activity and no claim of bidder at a later date, whatsoever, in this regard shall be entertained by BHEL. |
| 38.4.1 | 0.7 % shall be paid on compliance of housekeeping of vendor's working area and store/ office areas. |
| 38.4.2 | 0.3 % shall be paid on compliance of general illumination of vendor's working area and stores, office area. |
| 38.4.3 | 0.2 % shall be paid on compliance of applicable OHSAS requirement as per guidelines of BHEL/ PSER and as specified in the tender. |
| 38.4.4 | 0.3 % shall be paid on compliance of applicable safety requirement as per guidelines of BHEL/ PSER and as specified in the tender. |
| 38.5 | Contractor's RA bill, complete & correct in all respects, certified by BHEL engineer, shall be paid after 45 days of receipt of bill with all supporting documents. |
| 38.6 | BHEL site at its discretion may further split up the above percentages of break up and effect payment to suit the site condition, cash flow requirement, according to the progress of work. |
| 38.7 | Such payment as above shall be effected only on certification by BHEL against completion of each stage. |
| 38.8 | Applicable GST, which can be claimed at any point, shall be released to you upon compliance of following: |
| 38.8.1 | You declaring such Invoice in your GSTR-1 |
| 38.8.2 | Receipt of Goods / services and Tax Invoice by BHEL |
| 38.8.3 | Confirmation of payment of GST thereon by you on GSTN Portal |
| 38.8.4 | Above is subject to receipt of goods/ service and tax invoice thereof along with vendor declaring invoice in their return and paying GST within timeline prescribed for availing ITC by BHEL. |
| 39.0 | PRICE VARIATION CLAUSE(PVC) |
| 39.1 | PVC is not applicable for this contract |
| 40.0 | OVER RUN CHARGES (ORC) |
| | Not applicable for this tender. |
| 41.0 | METHOD OF MEASUREMENT |
| | Mode of measurement shall be as per relevant clauses of technical specification of this tender. In case if the same is not available, then relevant IS 1200 in conjunction of other relevant IS codes shall be adopted. In case the same is also not available, the standard procedure adopted in CPWD (latest edition) shall be adopted. In case the same is also not available in CPWD, the measurement of the work done will be based on the mutual agreement between BHEL and contractor. In all the above cases, the interpretation of BHEL will be final and binding to the contractor. |
| 42.0 | EXTRA/ ADDITIONAL ITEMS OF WORK |
| | It shall be as per relevant clause of GCC. |
| 43.0 | INSURANCE |
| 43.1 | BHEL shall arrange comprehensive MCE (marine cum erection) Insurance Policy for total project supply & services including balance of plant package covering transit risks & loss, destruction or damage during handling at Site, Storage, civil works ,erection, testing and commissioning up to trial operation completion of unit including theft, sabotage, fire, lightning and other natural calamities. |
| 43.2 | Contractor shall report to BHEL in writing any damages to equipment/components on receipt, storing, and during withdrawal of the materials from stores, in transit to site and unloading at place of work and during erection and commissioning till trial operation completion including handing over. The above report shall be as prescribed by BHEL site management. Any consequential loss arising out of non-compliance of this stipulation will be borne by contractor. |
| 43.3 | The contractor will take necessary precautions/ due care to protect the material at Project site, while in his custody from any damage/ loss till the same is handed over to BHEL/ customer at Project site. For lodging/ |

| TENDER NO – PSER:SCT:SAL-C2078:20 | | |
|-----------------------------------|---|---------------|
| VOLUME-IF-CML-REV-00 | TECHNICAL CONDITIONS OF CONTRACT (TCC) | PAGE 22 OF 30 |

| | |
|------|---|
| | processing of insurance claim the contractor will submit necessary documents. BHEL will reserve the right to recover the loss from the contractor as detailed below in case the damage/loss is due to negligence/ carelessness on the part of the contractor. In case of theft of material under contractor's custody, the same shall be reported to police by the contractor immediately and copy of FIR and subsequently police investigation report shall be submitted to BHEL/ customer for taking up with insurance. However, this will not relieve the contractor of his contractual obligation for the materials in his custody. |
| 43.4 | In case the damage/loss/theft of materials are attributable to negligence/failure in discharging the duties and obligations of the contractor, the expenses incurred for repair/replacement of such components in excess of the amount realized from the underwriters, limited to Normal Excess (Deductible Franchise) shall be recovered from the contractor. |
| 43.5 | Other conditions of Insurance shall be as per relevant clause of GCC/SCC. |
| 44.0 | GUARANTEE Guarantee period shall be 12 months from the date start of guarantee period as per relevant clause of GCC. Commencement of guarantee period shall be from the date completion of work under the contract as certified by BHEL |
| 45.0 | IDLE CHARGES Not applicable for this contract. |
| 46.0 | OTHER TERMS All other term & conditions of this specification shall be governed by the pertinent provisions of GCC and other volumes of this tender, as applicable. |

| | | |
|-----------------------------------|---|---------------|
| TENDER NO – PSER:SCT:SAL-C2078:20 | | |
| VOLUME-IF-CML-REV-00 | TECHNICAL CONDITIONS OF CONTRACT (TCC) | PAGE 23 OF 30 |

ANNEXURE- A
LIST OF EQUIPMENTS FOR CIVIL SITE LABORATORY

| CONCRETE TESTING EQUIPMENT | | | | |
|----------------------------|---|--|---|----------|
| SL NO. | NAME OF TEST | NAME OF EQUIPMENT | SIZE OF EQUIPMENT | IS REF. |
| 1 | Initial & final setting time, Consistency of cement | Vicat Apparatus with desk pot | Standard | IS 55 |
| 2 | Shrinkage of cement, Auto Clave Test | Le Chatelier's apparatus Auto Clave Equipment | Standard | IS 5514 |
| 3 | Abrasion value test | Los Angeles Abrasion testing machine | Standard | IS 2386 |
| 4 | Aggregate Impact value test | Aggregate Impact value testing machine with blow counter | Standard | IS 9377 |
| 5 | Aggregate crushing value test | Crushing value apparatus | Standard | IS 2386 |
| 6 | Flakiness index | Thickness gauge for measuring flakiness index | Standard | IS 2386 |
| 7 | Elongation Index | Elongation gauge | Standard | IS 2386 |
| 8 | Bulk density, voids and bulking apparatus | Measuring cylinders | 3, 5, 10 & 15 liters cylinders | |
| 9 | Concrete Compressive test | Digital Compressive Testing Machine with 2000 KN capacity. | 2000KN capacity | IS 2505 |
| 10 | Cement mortar cube casting | Mortar Cube mould | 70.6 x 70.6 x 70.6 mm, minimum 06 sets desired. | IS 10086 |
| 11 | Concrete Cube casting | Concrete Cube Mould | 150x150x150mm, minimum 20 sets desired considering TG Raft major concreting activity. | IS 10086 |
| 12 | Workability of concrete | Slump cone | Standard, atleast 04 nos | IS 456 |
| 13 | Specific gravity of aggregates | Pycnometer | Standard, atleast 02 nos | IS 383 |
| 14 | Cement mortar cube vibrating | Motorised vibration machine for cement testing | Standard | IS 4031 |
| 15 | Course aggregate Sieve analysis (Concrete & Road Works) | Sieve set | 450mm dia GI Frames Size: 125 mm, 90 mm, 75 mm, 63 mm, 53 mm, 40 mm, 20 mm, 16 mm, 12.5 mm, 10 mm, 4.75 mm, Pan and cover | IS 383 |
| 16 | Fine aggregate sieve analysis | Sieve set | 200 mm dia Brass sieves; Size 4.75 mm, 2.36 mm, 1.18 mm 600 micron, 300 micron, 150 micron, 75 micron, 75 micron, Pan and cover | IS 383 |
| 17 | Sieve Shaker | Motorised Sieve shaker | Mfg. Catalogue | |
| 18 | Silt content check | Sand silt content beaker | Standard | |

| Soil Testing Equipment (Backfilling, Levelling/ Grading & compaction) | | | | |
|---|----------------------|----------------------------------|--------------------------|---------|
| 1 | Proctor density test | Std proctor Compaction apparatus | Standard | IS 2720 |
| 2 | Moisture Content | Rapid moisture meter | Standard, atleast 04 nos | IS 2720 |

| Process Control Accessories | | | | |
|-----------------------------|--------------|-----------------------------------|--------------------------|--|
| 1 | Hot air oven | Temperature range 50° C to 300° C | 600x600x600mm (min.size) | |

| TENDER NO – PSER:SCT:SAL-C2078:20 | | |
|-----------------------------------|---|---------------|
| VOLUME-IF-CML-REV-00 | TECHNICAL CONDITIONS OF CONTRACT (TCC) | PAGE 24 OF 30 |

| | | | | |
|----|--|--|--|--|
| 2 | Electronic balance | 3 nos | 600gx0.01g, 10g and 50 kg | |
| 3 | Physical balance | 5 kg capacity | Weights upto 5 kg | |
| 4 | Thermometer | Temperature range 0° C to 150° C | Digital | |
| 5 | Poker Thermometer (Concrete Road) | Temperature range 0° C to 50° C & 150° C | 02 nos each required | |
| 6 | Measuring jars | 2 nos set of each size | 100ml, 200ml, 500ml & 1000 ml | |
| 7 | Gauging trowlers | 4 nos | 100mm & 200 mm with wooden handle | |
| 8 | Spatula | 2 nos each size | 100mm & 200 mm with long blade wooden handle | |
| 9 | Stainless steel scoop | 2 nos each | 2 kg and 5 kg | |
| 10 | Vernier calipers | 2 nos each | 12" and 6" Sizes | |
| 11 | Digital paint thickness meter for steel | 02 nos | 500 micron Range | |
| 12 | GI tray | 02 nos each | 600x450x50mm, 450x300x40mm, 300x250x40mm | |
| 13 | Electric mortar mixer | 01 nos | 0.25 CUM capacity | |
| 14 | Digital paint thickness meter for masanory/concrete painting measurement | 02 nos | 150 micron range | |

| TENDER NO – PSER:SCT:SAL-C2078:20 | | |
|-----------------------------------|---|---------------|
| VOLUME-IF-CML-REV-00 | TECHNICAL CONDITIONS OF CONTRACT (TCC) | PAGE 25 OF 30 |

NOTE :

LIST OF TENTATIVELY APPROVED SUPPLIERS / DESIGNERS IS PROVIDED HEREUNDER. HOWEVER, IN CASE THE BIDDER PROPOSES TO PROCURE ITEMS FROM OTHER SUPPLIERS, SPECIFIC APPROVAL SHALL BE REQUIRED TO BE TAKEN FROM BHEL / NTPC AS PER APPROVED QP. FURTHER BIDDER MAY NOTE THAT LIST CONSISTS OF ONLY TENTATIVELY APPROVED VENDORS. SPECIFIC APPROVAL MUST BE TAKEN FROM BHEL / NTPC PRIOR TO EXECUTION AT SITE.

| SL. NO. | ITEM | PROPOSED SUB SUPPLIER | PLACE OF MANUFACTURING | REMARKS |
|---------|---|-------------------------------|------------------------|------------------------------|
| 1 | CONSTRUCTION CHEMICALS - ADMIXTURES, PLASTISIZERS, RETARDERS WATER PROOFING COMPOUNDS GROUTS | SIKA INDIA LTO | - | |
| | | CICO TECHNOLOGIES LTD | - | |
| | | FOSROC CHEMICALS (I) PVT LTD | - | |
| | | BASF | - | |
| 2. | FALSE CEILING- GLASS REINFORCED GYPSUM SYSTEM, MINERAL FIBRE BOARD SYSTEM,PREPAINTED COIL COATED STEEL SYSTEM | SAINT GOBAIN | NEW DELHI | |
| | | HUNTER DOUGLOUS | MUMBAI | |
| | | TIGER STEEL | PUNE/MUMBAI | |
| | | INTERARCH | NOIDA | |
| | | LLOYD INSULATION | - | |
| | | MG INDUSTRIES | FARIDABAD | |
| | | ARM STRONG | NEW DELHI | |
| 3 | PAINT AND PAINTING SYSTEM | BERGER | - | |
| | | SHALIMAR PAINTS | - | |
| | | JENSON AND NICHOLSON | - | |
| | | KANSAI NEROLAC | - | |
| | | AKZO NOBEL | - | |
| | | ASIAN PAINTS | - | |
| 4 | COLOUR COATED SHEET (FOR COIL) | UNION STEEL | KOREA | |
| | | DONGBU STEEL | KOREA | |
| | | BHUSHAN STEEL AND STRIPS LTD. | RAIGAD | |
| | | ESSAR STEEL LTD | PUNE | |
| | | NATIONAL STEEL AND AGRO | DHAR | |
| | | JSW STEEL COATED PRODUCTS LTD | KAMLESHWAR | Formerly JSW ISPAT Steel Ltd |
| | | BHUSHAN STEEL LTD. | SAHIBABAD | |
| | | JSW LTD | THANE | |
| | | TATA BLUESCOPE STEEL LTD | JAMSHEDPUR | *AL-ZN COIL FOR CLADDING |
| | | | | |

| TENDER NO – PSER:SCT:SAL-C2078:20 | | |
|-----------------------------------|---|---------------|
| VOLUME-IF-CML-REV-00 | TECHNICAL CONDITIONS OF CONTRACT (TCC) | PAGE 26 OF 30 |

| | | | | |
|---|-------------------------------|---|-------------------|-----------------|
| 5 | PROFILERS FOR DECKING SHEETS | UNIMET PROFILES LIMITED | DHARUHERA | |
| | | MULTICOLOUR STEEL INDIA LIMITED | GURGAON | |
| | | ISOLLOYD | SOLAN | |
| | | NATIONAL STEEL AND AGRO | DHAR | |
| | | ERA BUILD SYS | RUDRAPUR | |
| | | TATA BLUE SCOPE | PUNE | HINJEWARI WORKS |
| | | TATA BLUE SCOPE | BHIWADI | |
| | | PENNNAR INDUSTRIES | HYDERABAD | |
| | | ALFA STEEL BUILDING SOLUTIONS | HOSUR | |
| 6 | PROFILERS FOR CLADDING SHEETS | MULTICOLOUR STEEL INDIA LIMITED | GURGAON | |
| | | UNIMET PROFILES LIMITED | DHARUHERA-HARYANA | |
| | | ERA BUILD SYS | RUDRAPUR | |
| | | TATA BLUE SCOPE | PUNE | HINJEWARI WORKS |
| | | TATA BLUE SCOPE | BHIWADI | |
| | | PENNNAR INDUSTRIES | HYDERABAD | |
| | | ALFA STEEL BUILDING SOLUTIONS | HOSUR | |
| | | ISOLLOYD | SOLAN | |
| | | NATIONAL STEEL AND AGRO | DHAR | |
| 7 | ELECTROFORGED GRATING | INDIANA GRATING | PUNE | |
| | | PREMIER POWER PRODUCTS (CALCUTTA) PVT LTD | HOWRAH | |
| | | GREATWELD | PUNE | |
| | | BHOLA RAM STEELS | PATNA | |
| | | KANADE ANAND UDYOG | THANE | |
| | | PINAX STEEL INDUSTRIES | PATNA | |
| 8 | GI PIPES | BIS APPROVED SOURCES HAVING VALID BIS LICENCE | - | |

| TENDER NO – PSER:SCT:SAL-C2078:20 | | |
|-----------------------------------|---|---------------|
| VOLUME-IF-CML-REV-00 | TECHNICAL CONDITIONS OF CONTRACT (TCC) | PAGE 27 OF 30 |

| | | | | |
|-----|---|---|-----------|--|
| 9 | PVC WATER STOP | DURON POLYVINYLS PVT. LTD | GURGAON | |
| | | KANTA RUBBER | HYDERABAD | |
| | | MARUTI RUBBER | NOIDA | |
| | | JYOTI POLYVINYL | VADODARA | |
| | | DEEP-JYOTI RUBBER PVT LTD | NOIDA | |
| 10 | BITUMEN ASPHALT | ALL GOVERNMENT REFINARIES | – | |
| 11 | PLASTIC, PVC PIPES | BIS APPROVED SOURCES HAVING VALID BIS LICENCE | - | |
| 12 | BITUMEN IMPREGNATED FIBER BOARD JOINT FILLER, BITUMEN SEALING COMPOUND | BIS APPROVED SOURCES HAVING VALID BIS LICENCE | - | |
| 13 | ALUMINUM COMPOSITE CLADDING | INDOMAX | ROORKEE | |
| | | ALSTONE | DEHRADUN | |
| 14 | CERAMIC / VITRIFIED TILES | KAJARIA | - | |
| | | SOMANY | | |
| | | SPARTEK INDIA | - | |
| | | NITCO | - | |
| | | ORIENT BELL | - | |
| | | MARBITO | | |
| | | RESTILE | - | |
| | | JOHNSON | . | |
| 15. | ACID /ALKALI RESISTANCE TILES, AR BRICKS, ARCEMENT (POTASSIUM SILICATE BASED CEMENT MORTAR, PHENOLIC BASED RESIN CEMENT) AR BITUMASTIC | CARBORANDUM UNIVERSAL | CHENNAI | |
| | | PELICAN | BHIWADI | |
| | | CAMBRIAN | ALWAR | |
| | | KERATECH | VADODARA | |
| | | CHAMPION CERAMICS | CHAMPA | |
| | | SUNSHINE CERAMICS | CHAMPA | |
| | | MAHAKOSHAL POTTRIES | KATNI | |
| | | PERFECT ACID WARE | JABALPUR | |
| | | BABA BAIDNATH REFRACTORIES | PURULIA | |

| TENDER NO – PSER:SCT:SAL-C2078:20 | | |
|-----------------------------------|---|---------------|
| VOLUME-IF-CML-REV-00 | TECHNICAL CONDITIONS OF CONTRACT (TCC) | PAGE 28 OF 30 |

| | | | | |
|-----|--|---|-----------|----------------------|
| 16. | FIRE PROOF DOORS | NAVAIR INTERNATIONAL LTD. | NEW DELHI | |
| | | SHAKTI MET DOOR | HYDERABAD | |
| | | SUPER STEEL | DELHI | FOR SINGLE LEAF ONLY |
| | | SIGNUM FIRE PROTECTION | NAGPUR | |
| | | RADIANT SAFE DOORS | AHMEDABAD | |
| 17 | PARTICLE BOARDS, PLYWOOD, MDF | NOVAPAN | - | |
| | | ECOBORD | - | |
| | | BHUTAN BOARD | - | |
| | | KITPLY | - | |
| | | CENTURY | - | |
| | | GREEN PLY | - | |
| | | DUROPLY | - | |
| | | MERINO | - | \ |
| 18 | ALUMINUM SECTIONS | HINDALCO | - | |
| | | INDALCO | | |
| | | BALCO (VEDANTA) | - | |
| | | NALCO | - | |
| | | JINDAL | - | |
| 19 | HIGH SOLID CONTENT LIQUID APPLIED URETHANE BASED ELASTOMERIC MEMBRANE FOR WATER PROOFING | STP | - | |
| | | IWL INDIA LTD | - | |
| | | LLOYDS | - | |
| | | CICO TECHONOLOGIES LTD | | |
| | | MK PETRO | - | |
| 20 | SANITARY ITEMS | PARRYWARE | - | |
| | | HINDWARE | - | |
| | | SEABIRD | | |
| | | ORIENT | | |
| | | HINDUSTAN | | |
| | | CERA | | |
| 21 | CP BRASS TAP AND OTHER SANITARY FITTINGS | GEM | — | |
| | | PARKO | - | |
| | | JAQUAR | - | |
| | | MARC | — | |
| 22 | POLYTHENE WATER STORAGE TANKS | BIS APPROVED SOURCES HAVING VALID BIS LICENCE | - | |
| 23 | NEOPRENE BELLOW STRAPS | CORI | CHENNAI | |
| | | RESISTOFLEX | NOIDA | |
| | | DWREN | KOLKATA | |
| 24 | RCC PIPES | BIS APPROVED SOURCES HAVING VALID BIS LICENCE | - | |

| TENDER NO – PSER:SCT:SAL-C2078:20 | | | |
|-----------------------------------|---|--|---------------|
| VOLUME-IF-CML-REV-00 | TECHNICAL CONDITIONS OF CONTRACT (TCC) | | PAGE 29 OF 30 |

| | | | | |
|----|--|---|---------------|--|
| 25 | POLYCARBONATE SHEETS | GE PLASTIC (SABIC) | – | |
| | | BAYER (MAKROLON) | – | |
| 26 | ELECTRICALLY OPERATED HOIST (5T/2T) | CONSOLIDATED HOIST | SATARA | |
| | | HERCULES HOIST | RA1GARH | |
| | | GRIP ENGG | FARIDABAD | |
| | | EDDY CRANE | PUNE | |
| | | ARMSHEL | BANGLORE | |
| | | CENTURY CRANE | PALWAL | |
| | | ELECTROTHERAPY | HOWRAH | |
| | | TRACTEL TRIFFER | PALWAL | |
| | | ALFA CRANES | ALWAR | |
| | | REVA HOIST | FARIDABAD | |
| 27 | STOP LOG GATES, TRASH RACK AND LIFTING BEAM | GENERAL MECHANICAL WORKS | BARODA | |
| | | TRIVENI | NOIDA | |
| | | MACMET | KOLKATA | |
| | | PRADEEP STRUCTURES | HOWRAH | |
| | | RED FAG | HYDERABAD | |
| | | BSBK ENGG | NOIDA | |
| 28 | PTFE BEARING ELASTOMERIC BEARING | ALL CURRENT MORTH/RDSO APPROVED VENDORS | | |
| 29 | FABRIC EXPANSION COMPENSATOR | KELD ELLENTOFT INDIA LTD | CHENNAI | |
| | | EAGLE BURGMANN KE PRIVATE LTD | CHENNAI | |
| 30 | MINERAL WOOL FOR THERMAL INSULATION - | ROCKWOOL INDIA LTD. | HYDERABAD | Subject to. carrying out K- value test at CBRI Roorkee / NTPC approved lab. |
| | | ROCKWOOL INDUSTRIES | BHILA1 | |
| | | LAP INUS | MALANPUR (MP) | |
| | | M1NWOOL | RAJANANDGAON | |
| | | LLOYD INSULATION | BHILAI | |
| | | U.P. TWIGA | BULENDSHAHAR | |
| 31 | GEOTEXTILE | GARWARE WALL ROPES Ltd | PUNE | |
| | | TENCATE GEOSYNTHETICS ASIA | MALAYSIA | NON WOVEN |
| 32 | GEOMEMBRANE (HDPE LINER) | D P WIRES PVT. LTD | RATLAM | |
| 33 | CI PIPES | BIS APPROVED SOURCES HAVING VALID BIS LICENCE | | |

| TENDER NO – PSER:SCT:SAL-C2078:20 | | |
|-----------------------------------|---|---------------|
| VOLUME-IF-CML-REV-00 | TECHNICAL CONDITIONS OF CONTRACT (TCC) | PAGE 30 OF 30 |

| | | | | |
|----|---|---|------------|--|
| 34 | COAL TAR ANTICORROSIVE COATING | RUSTECH | KOLKATA | |
| | | PORWAL INDUSTRIES | RAIPUR | |
| | | MP TAR | BHILAI | |
| | | STP UMIED | JAMSHEDPUR | |
| 35 | ELASTOMERIC POLYURETHANE COATING | CIPY | PUNE | |
| | | AMCHEM | NOIDA | |
| | | E. WOOD. (APPLICATOR: PSL HOLDING, INDIA) | UK | |
| | | CICO TECHONOLOGIES LTD | GURGAON | |
| 36 | HIGH PERFORMANCE MOISTURE COMPATIBLE CORROSION RESISTANT COATING SYSTEM | CECRI LICENSED SOURCES | | |
| 37 | MS PIPES (IS:3589, WELDED PIPES) | BIS APPROVED SOURCES HAVING VALID BIS LICENCE | | |
| 38 | PVC COATED CHAIN LINK FENCING & REINFORCED BARBED TAPE | SAUDAGAR MAC MAMMANLAL PVT LTD | | |
| | | MECAFERRI | | |